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# PACIFIC PROBLES ANNUAL



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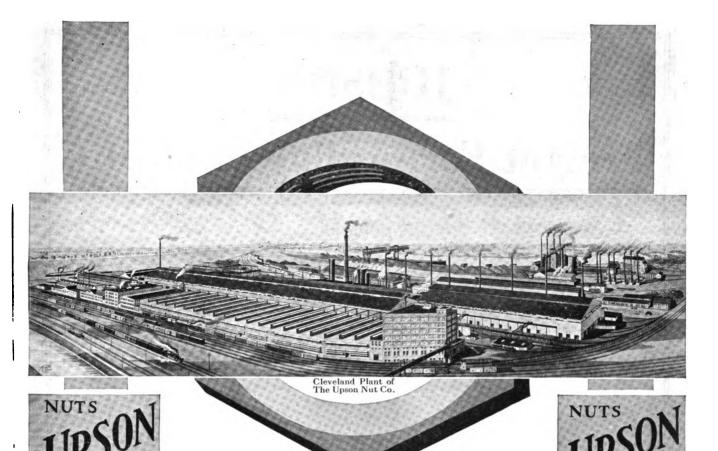
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# Preface to the Fifth (1919) Edition of the Annual Number of



SINCE the issuance of the fourth edition of this manual it has become, as is indicated above, the annual number of and supplemental to the regular monthly edition of *Pacific Ports*, now one of the leading foreign trade magazines of the world, giving especial attention to its chosen field--the commerce of the Pacific.

As a result of this growth and combination, this publication will be found to be much more complete and comprehensive in the topics it covers and the information it supplies, without losing any of those features that, in former editions, won for *Pacific Ports* its enviable standing and reputation as an authoritative and dependable handbook and lexicon of foreign trade.

For the success that both the annual and monthly issues of *Pacific Ports* have achieved the publishers are deeply grateful and modestly proud, having in mind always the fact that to a discriminating and appreciative public is due both the credit of this achievement and an acknowledgment of many courtesies extended and received.

As an annual number this manual will continue to be issued the first of each year.



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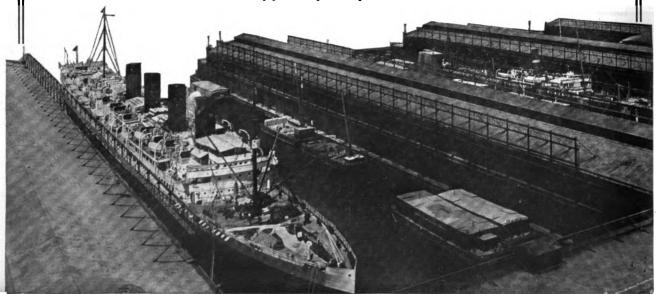
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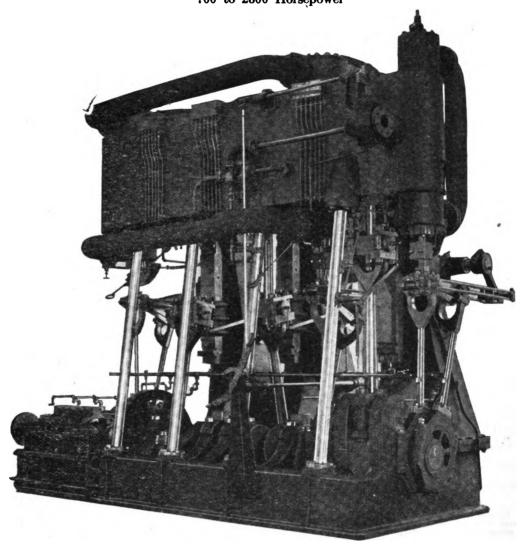
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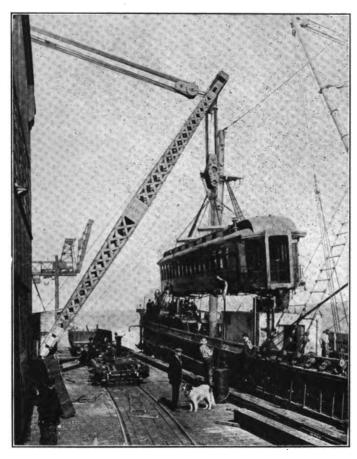
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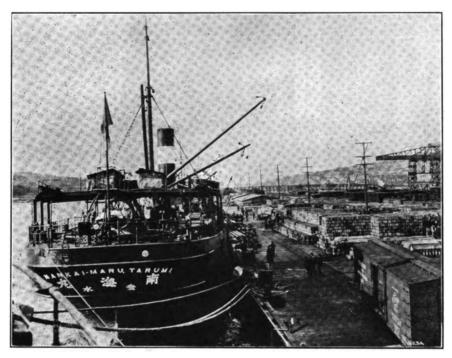
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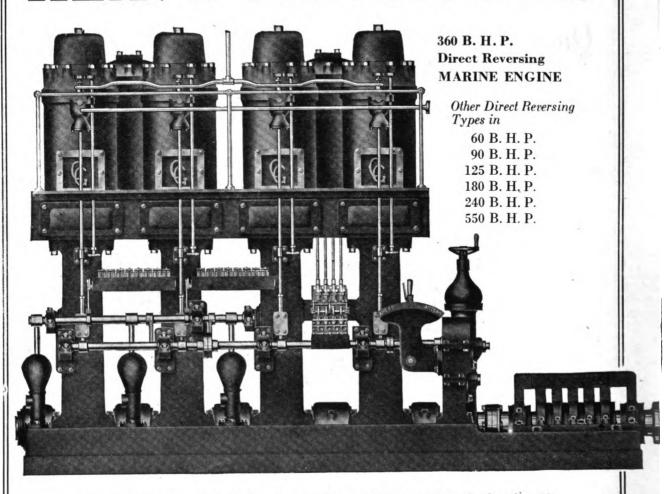
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PORTLAND has four well equipped municipal docks and piers.

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PORTLAND is the largest lumber manufacturing city in the world. PORTLAND in normal times, is the second largest wheat shipping

port in the United States. PORTLAND is one of the largest flour shipping ports in the United States.

PORTLAND is the financial center of the Pacific Northwest.

PORTLAND has produced a greater number of ships than any other city in the United States in the past 30 months.

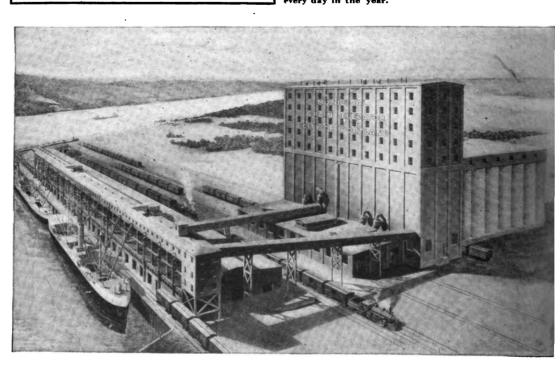
has very cheap electric power. Millions of horsepower PORTLAND close at hand invite development.

PORTLAND is the natural center for a hinterland of 250,000 square

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There is a depth of 30 feet at the zero stage, continuous passage every day in the year.

feet at the zero stage, in the channel of the Columbia River to Portland, permitting



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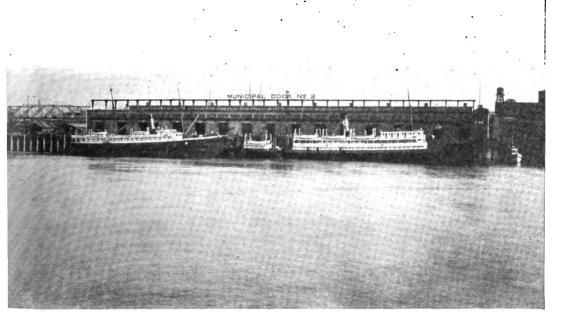
PORTLAND has numerous ship chandlers, and supply houses of all kinds.

BER

Columbia River entrance is 40 feet at the lowest stage of the tide and is one-half mile wide. There is a depth of 36 feet for an additional width of over one-half mile.

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ONE OF PORTLAND'S MUNICIPAL DOCKS

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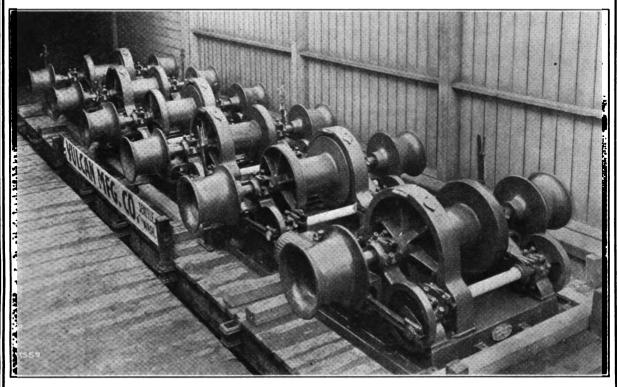
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## PORT OF TACOMA

The Harbor Commencement Bay, an arm of Puget Sound, is the geographical name of the harbor of Tacoma, famous for its natural advantages and depth of water, where vessels of the greatest draft can proceed to the wharves at any stage of the tide.

The Bay is two and a half miles to four miles wide, with ideal shelter. The shore line is ten miles in length, with unlimited possibilities of development. The U.S. Coast and Geodetic Survey reports that "the waters of the bay are deep throughout, ranging from 50 fathoms at the entrance, to 25 to 30 fathoms at the head. The bay is easy of access and free from dangers."

The Port The facilities of the Port are nearly all privately owned and notably by two great railway systems, the Northern Pacific and the Chicago, Milwaukee and St. Paul. These transcontinental railroads. with thousands of miles of branch roads, extend to Chicago, nearly 2400 miles away, with their Pacific Coast termini at Tacoma, traversing the peerless Mississippi Valley, the grain fields of the Dakotas, the fertile valleys of Montana, Idaho and Washington, constituting a hinterland of vast production-field, factory and mine. The Port of Tacoma is the logical funnel for all the wares to and from this territory.

In addition to the railways mentioned, the Great Northern, that also reaches the East, and the Union Pacific system from the South and Southeast, traversing the central territory from the Missouri River to the Pacific Coast, have terminals at Tacoma.

The Port of Tacoma, therefore, answers to the postulate:

"A port will be great if there is a large choice of connections with the interior"

The Present Facilities including the railway terminals, consist of forty-two wharves of various lengths and widths. These include the wharves of the six ship-building plants, approximating twelve thousand feet, and those of many industries, sawmills, four flour mills, machine shops, copper smelter, marble works and commission houses. The face of all the wharves. little and big, slightly exceeds thirty thousand feet, or nearly six miles.

There are no port charges against the ships.

### Proposed Municipal Recently, by the Development

overwhelming vote of the people of Tacoma and the Coun-

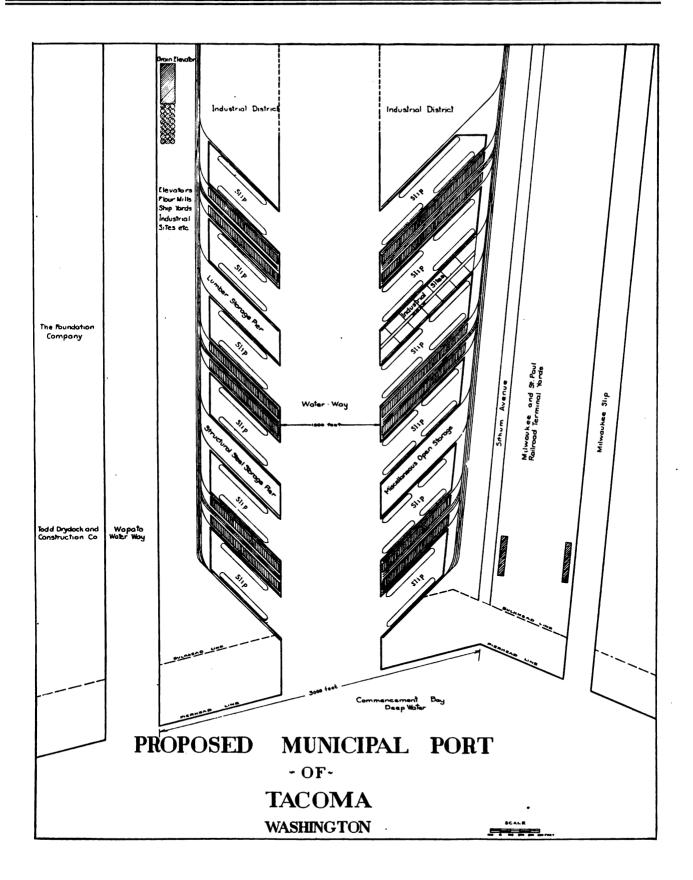
ty of Pierce, of which Tacoma is a part, what is known under State Law as a Port Commission has been created, with ample power to add to the present facilities as necessary, employing the ablest engineering talent and port planners to do something that may approach the perfect port.

The diagram upon the opposite page, more or less self-explanatory, indicates what the Commission is planning. The area of land and waterways that this plan covers is equivalent to 280 acres and the location of the same has been pronounced by an eminent port authority as ideal. The plan is called the "Herring Bone" plan. It will be developed as the requirements of the Port demand.

The main waterway will be a thousand feet wide and the slips two hundred and fifty feet wide and the piers about the same width. This waterway could be extended inland several miles and afford accommodations for scores of ships at one time.

The plan contemplates an industrial district and space for anything that will contribute to the success of the development. The transit sheds, warehouses and piers will be equipped with the most efficient labor-saving devices for handling cargo. The railroad connections with the piers will be most complete.

Tacoma is a city of 125,000. It is noted as a city of homes and a scenic environment that the great actor, Henry Irving, said was unsurpassed in the world. It is famous for its public schools and a stadium that Theodore Roosevelt once said was without an equal on either continent. In the immediate vicinity is a military post with barracks for fifty thousand men and a divisional maneuver site owned by the government of over sixty thousand acres.



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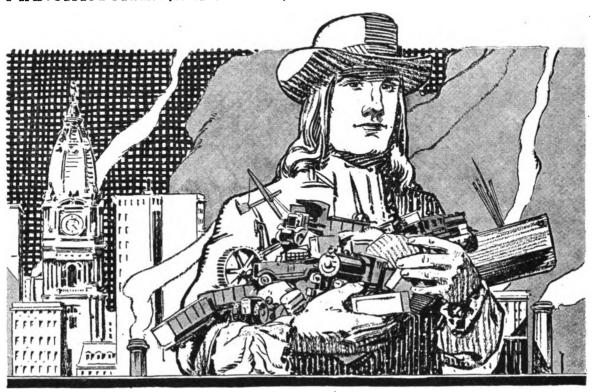
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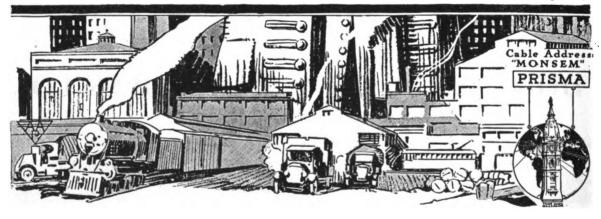


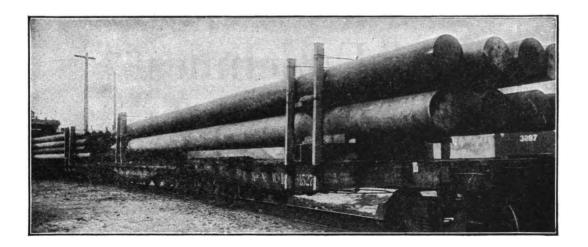
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- SHANGHAI TO HONGKONG AND CANTON—Direct service. A regular scheduled service three times a week by the fast steamers "Yingchow," "Shantung," "Sinkiang," "Sunning" and "Suiyang." These steamers lie alongside the French Bund at Shanghai.
- SHANGHAI TO TIENTSIN—via Wei-hai-wei and Chefoo.—A regular service by the Company's steamers "Tungchow," Fengtien," "Shuntien" and "Shengking." These steamers lie alongside the French Bund at Shanghai.
- SHANGHAI TO HANKOW—via Chinkiang, Nanking, Wuhu and Kiukiang.—Regular passenger and cargo service by the Company's fast twin-screw steamers "Woosung," "Luen Yi," "Ngankin," "Poyang," "Tatung" and "Tungting." In addition are the S.S. "Chungking" and "Wuchang," both steamers having excellent facilities for handling cargo, the last-named steamer being capable of loading heavy lifts up to 40 tons. S.S. "Woosung" is also fitted with heavy derricks.
- HANKOW TO CHANGSHA AND SIANGTAN—via Yochow.—Steamers "Kian" and "Siangtan"—sailings every three or four days, water permitting.
- HANKOW TO ICHANG—via Yochow and Shasi.—SS. "Shasi" is dispatched, water permitting, about every 10 days.
- SHANGHAI TO NINGPO—S.S. "Hsin Peking" from the French Bund, Shanghai, every Monday, Wednesday and Friday, and from Ningpo every Tuesday, Thursday and Saturday.

SHANGHAI TO ANTUNG SHANGHAI TO TSINGTAO 

Irregular services.

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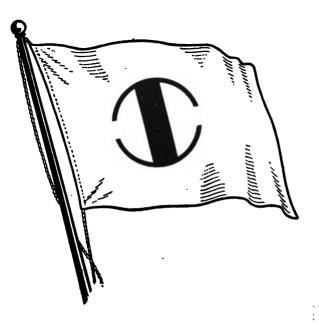
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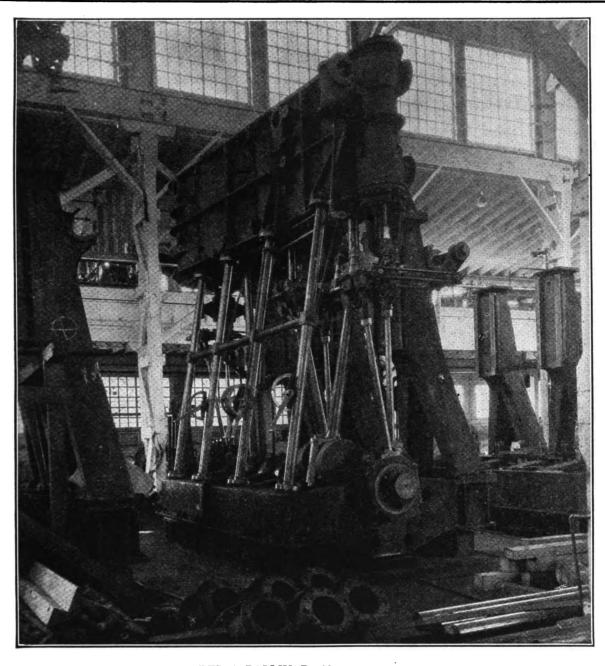
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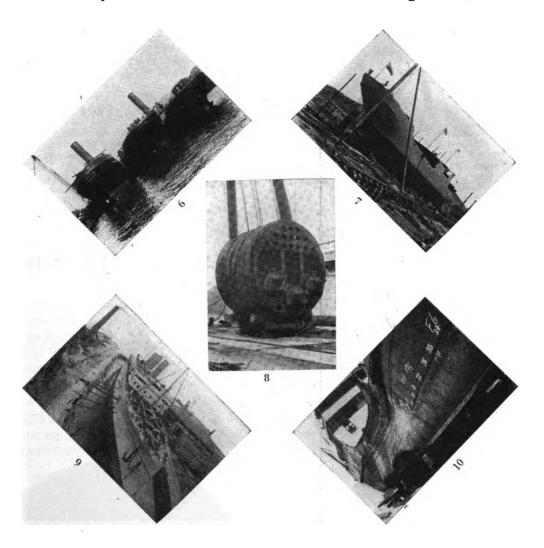
Telegraphic Address MANIFESTO" HONGKONG

**HONGKONG** 

Codes used: A1, ABC, 5th Edition; Engineering, First and Second Editions; Western Union, and Watkins

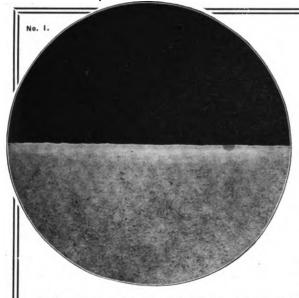
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La Ilustración No. 1 enseña la orilla doblada del

La Ilustración No. 1 enseña la orilla doblada del Libro Foldwell Embadurnado—media pulgada fotografiada bajo el microscopio.

Este doblez perfecto de la orilla soporta el terrible maltrato del correo de segunda clase, y las circulares y tarjetas postales llegan a su destino en la misma condición perfecta en que salieron de la oficina.

Las páginas de los catálogos no se rompen en las costuras ni se caen, destruyendo así su utilidad para lograr ventas.

La Ilustración No. 2. representa la orilla dobla-diza del papel común satinado para libros en el mercado y es la característica de todos excepto la del Foldwell.

del Foldwell.

Esta fotografía representa únicamente media pulgada magnificada.

Un buen texto, bellas ilustraciones y sorprendentes composiciones serán inútiles si los anuncios de Ud. sirven únicamente para el canasto de papeles cuando llegan a su destino.

Escribase pidiendo hojas enteras, catálogos simulados y bellisimas demostraciones impresas.

L'illustration No. 1 montre le rebord replié du Livre à revêtement Foldwell—photographié à un demi pouce sous le microscope.

Le rebord parfaitemente replié résiste aux efforts terribles du service de la poste de deuxième classe et les circulaire et cartes expédiées par l'in-ternédiaire de la poste arrivent à destination dans la même parfaite con-dition qu'elles étaient en quittant votre bureau.

Les pages de catalogues ne se déchirent pas aux points de couture, ne perdent pas, détruisant ainsi les opportunités de vente,

L'illustration No. 2 représente le rebord replié de la plupart des livres qu'on trouve en vente; il caractérise le type général de tous, excepté celui du Foldwell.

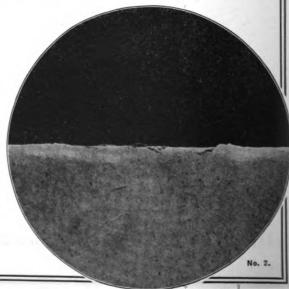
Cette photographie ne représente qu'un demi pouce magnifié,

Bonne copie, belles illustrations et compositions élégantes ne produisent as d'effet si vos annonces sont jetées dans le panier à rebuts en arrivant pas d'effet si à destination.

Demandez-nous des Feuilles, des Echantillons et des Démonstrations magnifiques imprimées,



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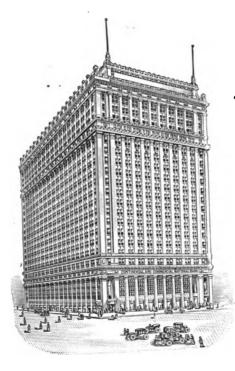
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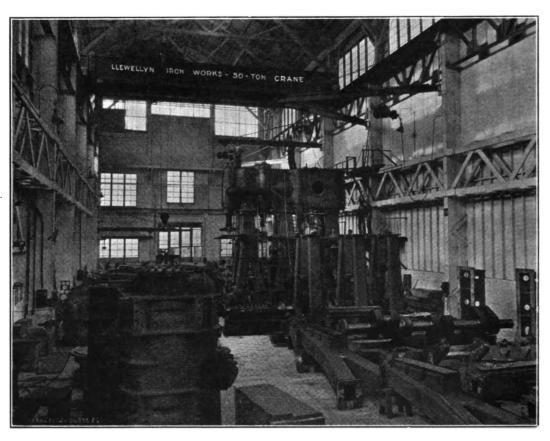
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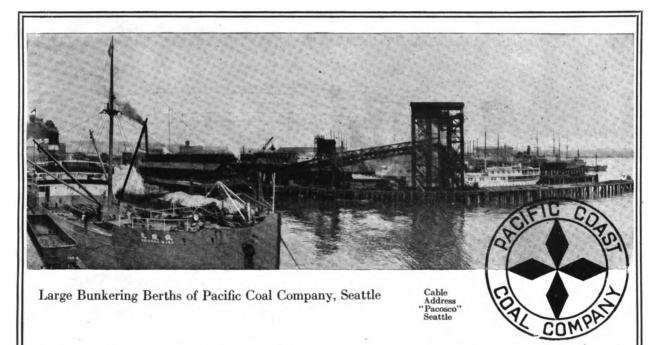
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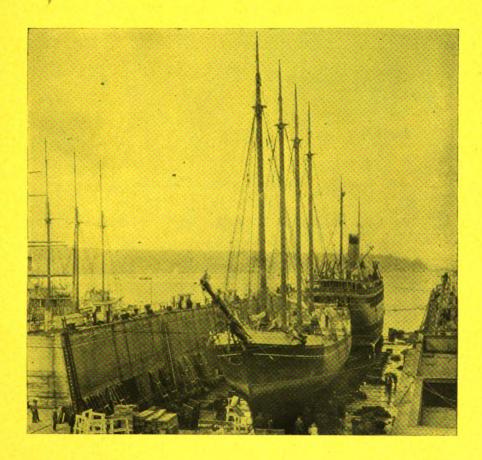
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# SKINIFR & FILLY BUILDERS OF STEEL STEAMSHIPS SEATTLE \*\* \* \* \* WASHINGTON

### BUILDING RECORD OF PLANT No. 1

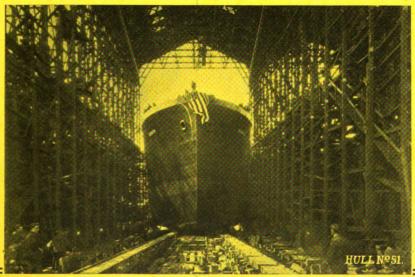
Hull No.		D.W.T.	Keel Laid	Launched	Delivered	Keel to Launch		Launch to Del.		Total K-Del.	
140.						W.D	C.D.	W.D.	C.D.	W.D.	C.D.
1 2 7 3 4	Niels Nielsen Hanna Nielsen Luise Nielsen S. V. Harkness Josiah Macy	8,800 8,800 8,800 10,000 10,000	May 2, '16 May 11, '16 Sept. 23, '16 Aug. 15, '16 Oct. 23, '16	Sept. 21, '16 Oct. 21, '16 Jan. 23, '17 Mar. 22, '17 Apr. 21, '17	Nov. 9, '16 Dec. 22, '16 Mar. 10, '17 May 8, '17 June 9, '17	119 137 100 183 151	143 164 133 220 180	41 51 39 40 40	50 63 47 48 50	160 188 139 223 191	193 227 180 268 230
	Tonnage to Date	46,400	Average Time to Date			138	168	42	52	180	220
9 10	STOLT NIELSON JEAN SKINNER LT. DEMISSIESSY INDIANA WEST HAVEN	8,800 8,800 8,800 8,800 8,800	Jan. 30, '17 Mar. 27, '77 Apr. 25, '17 May 25, '17 Aug. 13, '17	May 22, '17 June 30, '17 Aug. 16, '17 Sept. 15, '17 Nov. 1, '17	June 26, '17 Aug. 20, '17 Sept. 19, '17 Oct. 20, '17 Dec. 24, '17	96 81 94 93 67	113 96 114 114 81	28 41 27 29 43	36 52 36 36 54	124 122 121 122 110	149 148 150 150 135
	Tonnage to Date 90,400 Average Time these Five						104 136	34 38	43 47	$\frac{120}{150}$	146 183
14 11 15 12 16	SEATTLE TRONTOLITE ABSAROKA WEST ARROW WESTLAKE	8,800 10,000 8,800 8,800 8,800	Aug. 21, '17 July 3, '17 Sept. 5, '17 Sept. 20, '17 Nov. 8, '17	Nov. 24, '17 Dec. 15, '17 Dec. 22, '17 Jan. 19, '18 Feb. 9, '18	Jan. 5, '18 Feb. 2, '18 Feb. 12, '18 Feb. 26, '18 Mar. 9, '18	80 138 91 100 76	96 166 109 122 94	33 39 41 31 23	43 50 53 39 29	113 177 132 131 99	139 216 162 161 123
	Tonnage to Date	. 135,600	Average Time these Five				117 130	33 36	43 46	130 143	160 175
18 19 17 20 21	CANOGA OSSINEKE WESTERN QUEEN WEST DURFEE WEST LIANGA Tonnage to Date	8,800 8,800 8,800 8,800 8,800 179,600			Mar. 23, '18 Apr. 13, '18 Apr. 25, '18 May 16, '18 May 4, '18	71 65 72 64 55 65 97	88 79 88 76 65	21 25 23 29 11 22 33	26 31 29 36 15 27 41	92 90 95 93 66 87 129	114 110 117 112 80 107 158
22 23 24 25 26	WEST ALSEK WEST APAUM WEST COHAS WEST EKONK WEST GAMBO	8,800 8,800 8,800 8,800 8,800	Mar. 4, '18 Mar. 19, '18 Apr. 2, '18 Apr. 16, '18 Apr. 25, '18	May 11, '18 May 23, '18 June 4, '18 June 22, '18 July 4, '18	June 4, '18 June 19, '18 June 29, '18 July 13, '18 July 20, '18	58 55 52 57 59	68 65 62 67 70	19 22 21 16 13	25 28 26 22 17	77 77 73 73 73 72	93 93 88 89 87
	Tonnage to Date	223,600				56 89	66 107	18 30	24 38	74 118	90 145

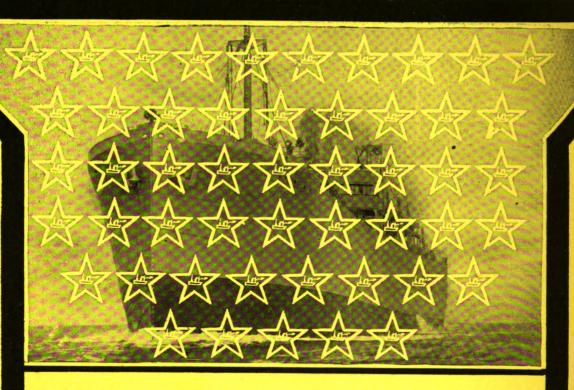


## SUILDERS OF STEEL STEAMSHIPS SEATTLE \* \* \* \* WASHINGTON

### BUILDING RECORD OF PLANT No. 1---Continued

Hull No.	Name	D.W.T. Keel Laid	Keel Laid	Launched	Delivered	Keel to Launch		Launch to Del.		Total K-Del.	
	Tranic		Keer Laid		Delivered	W.D.	C.D.	W.D.	C.D.	W.D.	C.D.
27 28 29 30 31	WEST GOTOMSKA WEST HOBOMAC WEST HOSOKIE WEST HUMHAW WEST LASHAWAY	8,800 8,800 8,800 8,800 8,800	May 16, '18 May 29, '18 June 11, '18 June 27, '18 July 8, '18	July 17, '18 July 27, '18 Aug. 15, '18 Aug. 28, '18 Sept. 12, '18	Aug. 7, '18 Aug. 17, '18 Aug. 29, '18 Sept. 14, '18 Sept. 30, '18	51 49 54 51 55	62 59 65 62 66	17 17 11 13 14	21 21 14 17 18	68 66 65 64 69	83 80 79 79 84
	Tonnage to Date	267,600	Average Tin	ne to Date		82	63 100 69	14 27 18	18 34 24	66 110 76	81 133 92
40 41	W. LOQUASSUCK WEST MADAKET WEST MAHOMET EDONTON EDGECOMBE Tonnage to Date	8,800 8,800 8,800 9,600 9,600	July 20, '18 Aug. 1, '18 Aug. 21, '18 Sept. 3, '18 Sept. 16, '18  Average Tin	Sept. 21, '18 Oct. 5, '18 Oct. 19, '18 Nov. 9, '18 Nov. 23, '18	Oct. 15, '18 Oct. 30, '18 Nov. 13, '18 Dec. 5, '18 Dec. 24, '18	53 53 46½ 52½ 51½	66	17 18 17½ 17½ 22½	26 31	70 71 64 70 74	84 89 82 92 98
		,					94	26	33	104	128
	EDGEFIELD EDGEHILL EDGEMONT EDGEMOOR EDGEWOOD	9,600 9,600 9,600 9,600 9,600	Sept. 25, '18 Oct. 10, '18 Oct. 23, '18 Nov. 14, '18 Nov. 27, '18	Dec. 7, '18 Dec. 24, '18 Jan. 11, '19 Mar. 29, '19 Apr. 19, '19	Dec. 31, '18 Apr. 2, '19 Apr. 22, '19 May 8, '19	54 54½ 58 63 69½	79 85	17 35½ 38½ 30½	50	71 90 96½ 93½	
Tonnage to Date         361,200         Average Time these Five         60         80           Average Time to Date         76         93											
53 55 57 58	Edisto Edmore Isher Eelbeck Elkridge	9,600 9,600 9,600 9,600 9,600	Dec. 11, '18 Dec. 28, '18 Jan. 15, '19 Apr. 2, '19 Apr. 23, '19	May 10, '19		76					
	Tonnage to Date	409,200	Average Tim Average Tim								
60	ELKTON	9,600	May 14, '19								
,	Tonnage to Date	418,800		Tay De la Contraction						,	
Tonnage 1916: 17,600 Tonnage 1917: 72,800 Tonnage 1918: 232,400											



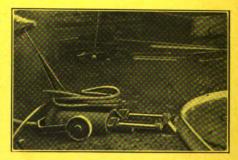


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# How to Get Into and Succeed in Foreign Trade

### Your Office and Your Location

EDITOR'S NOTE—The following articles are a part of a special series that have appeared, or will in the future appear in the Pacific Ports monthly magazine. The nature of the installments is such that many essential phases of the importing and exporting business are completely covered in each. In this respect, while not representing the whole of the subject, the value of the series as presented in this form is in the fact that the preliminary steps are well covered. The remaining installments, before mentioned, may be obtained by following the monthly magazine. Supplementing these articles dealing with the concrete methods for getting established in the importing and exporting trade, will be found a most comprehensive account of "How Germany Secured Her Foreign Trade," followed by a number of other articles which complete the department.

Once you have decided to enter foreign trade—the most verdant field of opportunity that the world knows—a problem worthy of your serious consideration is "How shall I

select the location of my office.

We may contemplate this subject from two standpoints. First, from that of the person about to enter foreign trade exclusively and, second from the viewpoint of the mer-chant already engaged in a lucrative business and desirous

of extending his activities.

It is an old and thoroughly accepted axiom of the export and import business that it can only be successfully conducted through an office situated in a port. There are many substantial reasons for this, the chief of which are that being located in a port you are within easy reach of the shipping, close to the custom house, and can readily get in contact with the foreign trade consuls so very important in expediting your foreign trade ventures. Furthermore, and this is the most important, export banking facilities are more numerous in a port town than elsewhere, a condition which is always bound to exist.

#### Selecting Your Port

The question of deciding upon the port in which you will open your establishment is of vital importance and should be given careful thought and study. It is extremely unwise to select the scene of your endeavors in a haphazard manner. You should consider at length and in great detail the country or countries in which you contemplate developing your business and an equal amount of study and deliberation should be attached to the appropriateness of the line

This is an age of specialization. Trade is specialized today, as well as the various professions. Many export houses consider it far more advantageous to carry one line of goods exclusively and find their markets in all the countries of the globe. It simplifies their bookkeeping, countries of the globe. It simplifies their bookkeeping, shipping and banking affairs. I know of concerns favoring this policy, for example, only lubricating oils, or flour, or machinery, or cotton prints, or boots and shoes, and nothing could possibly induce them to add another item, no matter how appropriate or alluring it might be. Some of these concerns have reached this conclusion after disastrous financial experiences, while others more conservative, have never expanded from their initial "single track" pro-

#### Specialize in Single Article

I know of a large export house in New York City that does a heavy Latin-American trade. They formerly carried cotton prints, novelties and small wares in addition to their main line of boots and shoes. Twenty odd years of practical experience has taught them that it is to their best interests to abandon every other commodity but boots and shoes, and this policy was announced to their customers. This decision was reached not because the other lines had caused them losses, but for the all sufficient reason that, in their opinion, growing footwear markets of Latin-America would require all their attention and all of their capital to properly exploit.

It may be more advantageous for you to confine your efforts to one country or to a small group of neighboring

countries, easily accessible, and preferable by the same line of steamships. Many strong houses have adopted this policy and each year accumulate satisfactory profits by trading with such inconspicuous nations as Nicaragua, or British Honduras, or some islands, such as the Society Islands or Tahati. Others find it more appropriate to do business with a larger number of nationalities, such for example, as Cuba and the West Indies, or Central America, or the Plate River ports, or China, or Russia, or Siberia, or Australia. Nothing could possibly force them into another mart, no matter what the prospects or how apparent the opportunity may be. They know intimately the merchants of the lands in which they are trading and are also known thoroughly to these buyers. To take on more ter-ritory means assuming more risks, the investment of more capital and experimenting and trying out of new areas—conditions which do not appeal in the least to the ultra conservative.

#### Hints on Selection

Assuming that you have decided upon the line or lines which you will carry and the country or countries with which you want to build up a business, it will be apparent that an appropriate port must be selected in which to open an office. And right here a word of advice may be timely. Foreign business men do not know our interior towns and cities. They are terra incognita to them. The names of our States confuse and annoy them. But they are intimately acquainted and thoroughly familiar with every one of our larger ports. You, therefore, simplify matters materially by opening your office in a port rather than in an inland city, no matter how important it may be from your point of view.

If you expect to do business with the Gulf cities of Mexico and the eastern coast of Central America, perhaps New Orleans offers the most inviting field. You will be nearer your future clients and the merchants of these countries have within recent years learned to look upon this port as a good market in which to trade. Besides this, the local business associations co-operate with exporters and importers in affording possible customers many facili-ties to induce them to buy in and ship to and from this port. Incidentally I might remark that our other port towns so desirous of extending their trade would do well to study and practice the co-operative system in vogue in this southern city. In addition, the opening of the Panama Canal has brought the entire West Coast of South America, as well as the Pacific coast of Central America, much nearer to the Crescent City, which means that there has been a steady growth of commercial relations between these parts of Latin-America and our largest gulf port which cannot by any means be easily diverted.

#### Must be Governed by Field Selected

If your business is to be devoted to enterprises with European nations, the Mediterranean littoral, the West Indies, the East Coast of South America, and portions of Africa, for reasons which are only too obvious, New York is by far the best locality for your office. I am fully cognizant of the fact that there are other eastern ports, such for instance as Boston, Baltimore, Philadelphia, Savannah and Mobile, but none of them can compare in any way with New York. They lack, above all things, railway terminals, the exceptional shipping facilities, docking space, warehouses and the advantageous and growing banking connections so necessary to the export and import trade.

Oriental business, especially that of China, Japan the Philippines, the Straits Settlements and the East Indies, as well as Australia is more accessible from San Francisco, or preferably Seattle, as reference to any map will clearly demonstrate. Furthermore, many merchants residing on the Pacific laved shores of the world and more particularly those of the West Coast of Central and South

America prefer doing their buying and selling with the Pacific ports of the United States. This is an old trade built before the days of the Panama Canal and cannot with facility be converted to other channels. It may be truthfully stated that once a foreign merchant has established his overseas connections and they prove satisfactory it is usually a very difficult matter to get him to make any changes, a strong argument, by the way, in favor of the permanency of export business.

#### Economical Transportation Important

Due consideration must, of course, be given to economical and perfect transportation facilities and railway and freight connections. This subject may be dismissed with the thought that most of the larger ports of this country are provided with proper equipment for their purposes and necessities, which will be added to or enlarged as conditions warrant. Generally speaking, this point need cause little or no annoyance.

Of course, the selection of the port in which you propose establishing yourself depends upon other problems which cannot be foreseen and of which you alone must be the judge. For this phase of the situation no generic rule can possibly be formulated. The solution of these features may be materially expedited by consulting with those thoroughly versed in foreign trade.

Having determined upon the city in which you will settle, the next subject for consideration is the site of your office. My knowledge of our larger port towns warrants me in saying that each one of them has its shipping districts, wherein are located the establishments of the steamship agencies, ship brokers, marine and other insurance agents, the foreign consulates and those banks which specialize in foreign transactions. It is only the part of good judgment to open an office in this section of the town, primarily for the great convenience and saving of time it will afford and secondly because it brings one in more intimate touch with those engaged in a similar line.

#### Save Much Trouble

If my business were to be of such a nature that most of my goods were to be exported to one country or to a group of nations closely related geographically, I should, if possible, get in the same building with or as near as possible to the consul or consuls for these lands and diplomatically try to cultivate the good will of these gentlemen, for they are in position to either do many favors or else to cause one no end of trouble if they are so inclined. And let me add that their "annoyance system" is so perfect that these complications may originate at the point of embarkation or the port of destination and may be of the most complicated and harrowing nature—so serious in fact as to jeopardize your business. It should, therefore, be one of your first duties to be properly introduced, preferably through some high grade source, to those of the foreign consular service with whom you anticipate being brought in contact. This will serve to smooth many other rough paths and will remove what at times may loom like enormous boulders in the road of your success.

#### Commercial Foresight

It is almost needless for me to state that as a man is judged by his clothes, so is one's business estimated to a great extent by his surroundings and his office equipment. It is, therefore, only sane commercial foresight to select your abode in a modern building and to furnish it with the latest labor saving office furniture and fixtures. Offices abroad are not so provided and when an overseas buyer calls on you, the contrast between his antiquated and heterogeneous office equipment and your very complete, upto-date establishment is sure to make a most favorable impression and to permanently fix you in his judgment as a valuable asset.

If you are already engaged in domestic business in a port, it is relatively easy for you to make the necessary changes if your office conditions so warrant. I would suggest, however, that if you are located in a remote or interior city that you at once open a branch office in the appropriate port. The facility it will afford you and your clients

in dispatching business will amply repay for the investment made and in addition will add to your commercial standing not only at home, but also abroad.

## Creating an Export Department

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It may be definitely and irrefutably stated that at least 90 per cent of those in trade in the United States may add an export department to their business at a small initial expense and with every possibility of making the venture a profitable one, provided they approach the problem with intelligence. In prospecting possible markets one should not forget that the people of the world differ racially and radically from the inhabitants of the United States. Different languages are spoken; different means of living prevail; different climatic influences are to be found. Different types of men with different temperaments and different ways of thinking are to be encountered. Different modes of doing business; different laws. All of which means that these markets require different methods of approach—that they positively cannot be entered by the plans to which one has been accustomed, or which have proven profitable in this country. Yet despite these differences, the expense of doing business in foreign territory is infinitesimal as compared with the profits to be derived therefrom. It is a fact today, as it has been in the past, that the world is filled with trade opportunities for Americans.

#### Handling Your Campaign

One's chance for a successful career in these lands materially depends on the manner in which his business-getting campaign is conducted. Prosperity will come only after careful thought and able planning. You simply cannot go into these trade places in a slip-shod, hit-or-miss manner and hope for an easy conquest. Many of the well-known captains of industry have felt that if certain methods which they employed in this country resulted in success which they employed in this country resulted in success for their products, the same plans adopted in overseas teritories would bring large returns. Never was there a greater fallacy. For example, several of our well-known brands of breakfast foods have attempted to break into Latin-American countries. From the American standpoint nothing was left undone. The advertising campaigns were conducted with praiseworthy efficiency. House to house distribution in which sample packages were liberally dodistribution in which sample packages were liberally donated to the public formed part of this propaganda. Demonstration booths were erected in stores and clubs and the dishes temptingly served to those willing to partake. Yet, in every instance, no permanent business resulted and the money so lavishly spent was completely lost. There was nothing enigmatic about it. To the ones familiar with these people, and acquainted with their habits, this advertising campaign was doomed to failure, for the simple reason that all Latin-Americans eat only the lightest kind of a breakfast, consisting of coffee and rolls, and nothing more The American breakfast food manufacturers were at fault in trying by any means to change, through the expenditure of a few thousands of dollars the customs of 75,000,000 people.

The same experiment has been tried with Latin-American and other nations by a well-known manufacturer of pickles and condiments, with similar results. The pickle man did not appreciate the fact that sour pickles were not acceptable to the palates of the overseas customers whose preferences were decidedly for very sweet or very hot relishes. A preliminary study of these markets would therefore have saved these manufacturers much money and the humiliation of defeat.

Impossible Trade Barriers

It is difficult indeed to impress the American producer with the enormity of these impossible trade barriers. I recall some time ago being retained by a well-known cooking stove manufacturing concern to study and report on the possibility of their article being adopted and used by Latin-Americans. My advice was emphatically against trying to enter these markets, because the meals of the Latin-American people are cooked, as they were hundreds of years ago in Spain and Portugal, over charcoal braziers. I also brought out the facts that coal and wood were

scarce in most Latin-American republics and that climatic conditions in most localities would not make stoves, radiating intense heat, welcome additions to the native kitchens, conditions which obviously would materially operate against creating a successful market. Despite my report, based on twenty-odd years actual residence in overseas trade centers, this big company, with its prominent directors, attempted to buck the current of public opinion with the inevitable result. A recent letter from the president of the organization admits their defeat (I quote his exact words): "a cost of about \$56,000, from which should be deducted approximately \$2,400 in orders actually received, most of which came from either American or European house-keepers.

#### Business Insurance

Assuming, however, that a preliminary investigation shows your product adapted for overseas markets, and most articles of American manufacture are, it is a relatively simple matter to add an export department to your already established business. Indeed, as time goes on you will find that your export department will develop into a sort of "hard times" business insurance and will help stabilize your income as well as reduce your overhead expenses.

It is a trade axiom that "Business is never dull all over the world at the same time." If in certain countries there exists a state of trade depression, in other lands there are bound to be great business activities. It is true that during panicky years in Great Britain, despite the fact that she dominated the world of finance, relatively few countries were involved in similar depressions, but on the other hand were indeed prosperous to a degree up to that time unknown. The last financial troubles that this country experienced were not to any appreciable extent reflected on other nations of the world—even those with whom we had the most intimate relationship.

Crop failures in one section of the world usually mean bumper harvests in other sections, and thus help materially in developing reciprocal markets and in maintaining credits. When India had her last great famine the United States never was more productive and was able to ship vast quantities of cereals to these depleted markets, obviously a favorable situation for the creation of new business, as it afterward proved to be.

#### Advantage of Seasonable Products

In addition to these facts, which of themselves are sufficient to warrant the thinking and progressive business man in entering foreign fields, there are many other reasons of importance and worthy of the most serious consideration, the chief of these being, that to those producing a seasonable product they offer an uninterrupted market of 365 days each year. A large percentage of the goods manufactured in the United States are of a seasonable type—that is, they are adapted for use only in summer or winter—spring or fall. I have particular reference to such articles as straw hats, felt hats, millinery, dresses, shoes, haberdashery, underclothes and the like.

But few of our business men are aware of the fact that the seasons of the year are reversed south of the Equator. In other words, they have summer when we have winter and vice versa. What this means to the business world in dollars and cents is almost impossible to estimate or to conceive. Its ramifications in the world of trade are numerous. There is hardly an industry that it does not merous. There is hardly an industry that it does not touch. The automobile buying season begins south of the Equator, when ours stops; the Latin-American farmer, the South African ranch owner, and the Australian cattleman are putting up wire fences when our country is covered with a pall of snow; crops are being harvested in the acreage under the Southern Cross when North American farmers are plowing their fields; agricultural implements and machines are being purchased in these lands when ours are having a well-deserved rest in barns and storehouses; parasols to shield one from summer suns are being used when winter's blasts sweep northern lands; summer finery bedecks fair femininity when American women are wrapped in furs against arctic winds. With this condition existing, it must be apparent to the most obtuse mind that an export department added to one's business will help materially in keeping the wheels of the factories turning throughout the United States: ships moving in the channels of trade, with full cargoes; labor contented and busy; greatly reduced overhead expenses and in addition show a favorable balance on the right side of the ledger. There is no business, be it great or small, that cannot directly profit by an export department, provided only, the goods one produces or handles are adapted for overseas trade.

Let me give a practical example of what an export department did to a seasonable business in which I am interested. The company is engaged in marketing flower and vegetable seeds, which, by the way, is a most typical seasonable industry. The selling period in the United States for this line is very short, lasting from the middle of October up to the middle of February. During these months we formerly had to train a selling corps and a factory force which worked intensively in handling the large business which overwhelmed us for a few weeks of each year. At the end of the season our carefully instructed salesmen were released and our factory employees disappeared. At the beginning of the season we were annually put to the expense of reorganizing our selling and factory personnel, which always involved considerable time and money. In addition the shortness of our working periods made it impossible to obtain and retain desirable or efficient help. As a consequence our efficiency was not of the highest. In other words we were doing business at a greater expense than conditions warranted, which meant a corresponding decrease in the profits of the concern.

#### Foreign Trade Proved Salvation

Foreign markets were sought. Two salesmen familiar with the seed business and speaking foreign languages were sent to Latin-America, the Orient, Africa and Australasia, while at the same time a relatively small but highly appropriate advertising campaign by mail and through the medium of the foreign press was conducted. From the very first large order which, by the way, came from Cuba, our overseas trade grew by leaps and bounds. In the first year it had assumed such proportions that we were enabled to retain most of our skilled factory help permanently and at the same time reduce the cost of our overhead to such an extent that a material increase was made in the annual dividend. The export department of this business has paid its expenses from the very start; has bred contentment among our employees; enabled us to select the most efficient workers and to keep them steadily employed. Instead of catering to a 120-day market we have expanded into a 365-day market, with proportionate profits. And we have done this in the face of competition from all over the world and despite the fact that our seeds were comparatively unknown in the markets which we entered, while transportation facilities never were worse in the history of the universe.

## How to Select Your Export Manager

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Having selected your office and having decided to enter the export business, the next step is to select your export manager. Upon this selection entirely depends the measure of success you will attain, therefore you must bring into play your very best executive abilities and your keenest powers of judgment.

I am assuming at this juncture that you have an established business and that you have decided to add an ex-

port branch thereto.

Whether you are a manufacturer seeking foreign trade, and have hitherto confined your attentions to domestic trade, or whether you are an export commission house or export commission merchants, the position is practically the same—you must appoint an export manager. The question then is how to secure the best man for your purpose. Foreign trade cannot be learned in a day or a month; it requires perpetual study to make perfect.

By advertising you may be flooded with applications, and even then it is very doubtful if one of the applicants will fill the bill according to your ideas. Knowing practically nothing about the business yourself, you would probably be so keenly critical that you would be looking

for a superman to fill the post. Such are seldom to be found seeking the position you have to offer.

#### Your Next Thought

Your next thought trends towards the best man in your present sales force. It is seldom that a domestic sales manager is a success as the chief of an export branch. Excellent men as they may be in their own particular sphere, they are lacking in the training required to take charge of a foreign trade branch. Their area has been so circumscribed and they have traveled so much in a beaten groove that they lack the broader vision and the necessary adaptability required in the newer and larger field. Many of these men, good business getters at home, have become more or less mechanical and have not the requisite knowledge of such matters as foreign finance and credits, shipping details and other duties incidental to foreign trade which they would be called upon to handle. Obviously then, a selection from such a source would not be a wise one.

You might, of course, elect to specially train a bright, intelligent young man, but whether he would fulfill your expectations is by no means certain, and while you were waiting for the finishing touches to his course, much valuable time would be wasted and others who had solved the

problem would get ahead of you.

The Government, seeing the success made by Germany, where decades of intensive practical training have produced such wonderful results in foreign trade, where the training has literally permeated into the system to as great an extent as has militarism—wisely decided on cooperative courses of education, largely through what is known as University Extension classes, which are now in operation over practically the whole of the country, and for some time past men, and women, too, for that matter, have become close students in these foreign trade classes. These schools have been doing really wonderful work, where professors, many of them with long practical experience, working along sound business lines, have been the means of thoroughly equipping their students for this walk in life. Some of these students have grasped the problems of foreign trade rapidly and in a masterly manner, and are fully competent to take hold of such a position as that of export manager.

#### Great Benefits Derived

These classes have been the means of bringing out the latent qualities of many students and fitting them for such positions, and by the careful selection of instructors we are gradually amassing a very valuable force of intelligent men, ready to handle the complex foreign trade problems and to successfully undertake the management of an export branch. Many of these students are men with good connections who wish to establish themselves in the foreign field. Many are lawyers, who, forseeing the many difficulties besetting foreign trade, wish to make them-selves masters of all technical points, so that when any disputes arise, their services may command a goodly fee as experts; but the great majority are young ambitious men, anxious to rise in the world, who see the great possibilities offered in the foreign trade field and the many opportunities afforded for a successful career. From this class of highly trained men, undoubtedly many an excel-lent selection can be made and the foundations for many a fortune be laid both for the exporter and the export manager. It must be borne in mind that these foreign trade classes deal with the subject from every angle possible; the most intricate problems are discussed and threshed out, and the man who matriculates has undergone such a thoroughly practical grounding in every detail that he may conscientiously claim the right to fill the managerial chair of an export house.

It may be that you would say such men are all very well in theory, but they lack the practical experience of those who have absolutely been out in the markets we wish to cater for; we want men who have rubbed shoulders with those we desire to trade with and who have proved themselves past masters at the export game. That is the class of man we are looking for and that is the class of

man we mean to have.

By all means, the idea seems a good one and in the long run you may possibly succeed in establishing a fine export branch. But mark the words—"in the long run."

#### On a Plane Alone

In other words, you have made up your mind to start in at the very top of the tree. You are on a plane alone. You may be able to afford the expense and a heavy one you will find it. There are some few firms—and they are very few—who have adopted such methods with success. They have been the daring spirits who have not been compelled to count the cost, and success has been with them. Others have adopted a similar policy and failed. Jones may be the best fellow in the world in the very territory you wish to cover and may possess every qualification possible to handle one particular line, but your line may be different and he may prove a rank failure as far as your business goes. Here you are saddled with and tied up to a losing proposition, because you wanted to commence at a point where others more far-seeing would be pleased to arrive after years of intensive work. "The race is not always to the swift, or the battle to the strong."

In England to this day many parents apprentice or article their sons to some of the old established firms and pay considerable premiums for the tuition they obtain. They commence absolutely on the ground floor and work their way up through all the mazes of intricacies, until in a course of years they are considered capable of taking care of a department. These are methods but little adopted here, but undoubtedly the training is usually very thorough and very practical. If perchance you could secure such a man in the reshuffle brought about by the war

you might probably pick a winner.

#### Changes Are Quick and Frequent

Again, changes nowadays are so quick and frequent that you might secure the services of a good man unexpectedly, possibly through the collapse of the firm he was engaged with from unforeseen misfortunes, or from a death, or from a trained son being taken in to fill the position which cannot support two. This is a case of where blood is thicker than water. Such cases frequently occur and you may be lucky enough to come across the very man you require almost by accident, but you may rest assured that if the man thus let out has proved himself capable and efficient he will not be idle long. You require to act quickly.

A method, fortunately not frequently adopted, is to tempt a good man from other employment by giving greater remuneration than he is already receiving. There are, too, times when this is permissible and there are few men who will not make a change if they believe it to their pecuniary advantage. This is but human nature. Your financial resources and your prospective business may warrant an expenditure his previous employer could not entertain. In such cases, while regretfully losing a good servant, good wishes usually accompany him for his fu-

hire.

Whichever course you elect to adopt in securing an export manager, and you may try them all before you finally get suited, there are certain essentials in the selection that should never be overlooked. See that the candidate has a knowledge of the language of the country you intend to deal with. More especially is this the case in an English speaking country where lack of education tells its tale at once. Usually a young man has at least acquired a smattering of other languages, possibly French, Spanish or German. Let him brush up on them at any rate to such an extent that he can translate letters you are practically certain to receive in one or all of these languages, and in case you desire him to travel for investigation purposes in countries where foreign languages are spoken, the knowledge would prove a wonderful asset. Much importance should be attached to this. A man should also be of a resourceful nature and a "good mixer" and the more versatile he is the greater will be both his and your ultimate success. Lastly, before closing the engagement, you must be satisfied that if he is to fulfill the mission to the utmost you must get absolute assurances of his trustworthiness and integrity, for no business is more easily killed than when even a suspicion of trickiness at-

taches to its dealings. Remember, you require a sharp man, but not a sharper.

In dealing with foreign trade as compared with domestic trade, the export manager must remember that here at home the mind of the buyer is receptive and flexible. He is prepared to entertain innovations more especially if the goods offered compare favorably in price and general condition with those previously recognized as

#### Points Worth Remembering

A plan of education will be commenced through the press, the salesman and other channels; not so with the Centuries of custom and prejudice have to be foreigner. overcome. He looks askance at innovations. What was "good enough for father is good enough for him." He is not educated up to the standard we pride ourselves in; that gift of adaptability which we possess he frequently does not. He is a race in himself, a distinct type with very fixed ideas. He is rarely inclined to move out of a groove, a beaten track. Climatic influences frequently have a bearing on the disposition of both the buyer and the customers and he is dependent on their whims and fancies. They possess all the characteristics of a totally distinct race. Their breeding makes for insularity. They do not possess the adaptability that centuries of race admixture has brought to Americans.

During their period of education along the lines of complete civilization and emancipation from ideas and methods of centuries, they require the most careful study and handling, and to attempt at one jump to ram our opinions and methods down their throats is only to cut our own. In generations to come or with the arrival of the milennium, newer methods and manners may be standardized. Until such time it will pay us to accept our customers as they are, not as we would like them to be, and to follow up by real pioneer and missionary work a course of gradual education until we attain the desired end.

Meanwhile, enough has been said to prove the absolute necessity of following out to the most minute degree the wishes of our customers as they are, if we are to retain them as such. Repeat orders are what count-one and one only, no matter what the profit be—is a fizzle, and as an exporter you may write yourself down a failure, caused entirely by your cocksureness of knowing better than the other fellow. Your ideas may be absolutely right,

but unworkable.

When you first went to school you commenced in the lowest class. So now, in the school of foreign trade, you must commence at the bottom and start by learning your alphabet if you desire to achieve any measure of success in the sphere of foreign trade. Unless you are prepared to bring your adaptability thus into play, keep out of the game and leave it to others more willing—yes, and more capable of efficiently handling the proposition. All these are vital points of which your export manager must be seized.

#### Remuneration Guided by Circumstances

As regards remuneration, you must, of course, be largely guided by circumstances, a good man is always worth good money and can build up your business to his worth. A bad man is dear at any price. This, therefore, brings us back to the fact that in order to select the right man you must bring all your own best intuitive powers into play. It is often found that a man's reserve energy is brought to the surface by a judicious blending of salary and a prospective interest in the business, for here again human nature comes into play. The more he makes for you, the more he makes for himself. This method is usually a good insurance premium, well spent.

We are in a position through the maelstrom of war's vagaries to fill many of the world's demands almost at a moment's notice, for which in the ordinary course of things we should have required years of intensive training. Therefore, to remain in this trade it behooves us to give the acme of service and so build it up through the export manager until it becomes supreme. Thus shall we be able to meet and defy any possible competition. The absolute necessity, therefore, of making a judicious selection will be apparent to everyone.

## How Germany Secured Her Foreign Trade

In taking up the study of importing and exporting, all of the useful information is not confined to expounding theoretic principles. Those who seek knowledge of the best methods for establishing themselves as importers and exporters, should at once put themselves in contact with the more general condition of the field, such as is afforded by the reports carried in the foreign trade publications. The appended article and several which follow it, appeared previously in Pacific Ports monthly magazine, and while in a sense disconnected with what has preceded, are of such a nature that much valuable advice can be gleaned from their contents.

Mr. Blackell's settle article which appeared in Pacific Ports magazine from

adrice can be gleaned from their contents.

Mr. Blackall's serial article, which appeared in Pacific Ports magazine from month to month, has recently concluded and is presented complete. The author, who was in London at the outbreak of the war, was much interested in foreign trade and made a special study of the subject in general, and Germany's methods in particular. He was enabled to gain an insight into the inner workings of the German plan by constantly reading and discussing the topic whenever opportunity occurred. He amassed a number of notes, from which he has compiled the series of articles which have been appearing in the magazine from month to month. At the present juncture, they should not alone prove interesting reading, but may be of material service to our business men.—THE EDITOR.

#### BY A. C. BLACKALL.

It is a matter of history that the British merchants were the first to systematically develop their overseas trade. Frequently junior members of the firm were sent out to their foreign branches, to become acquainted first hand with the conditions and requirements, remaining abroad for years and frequently a lifetime, or, they might be sent to establish new branches and con-nections. They were known to be honorable and just in their dealings, and were looked up to as the merchant princes of the world. In her own colonies Great Britain was paramount. It was a difficult matter to get a foothold on her trade preserves.

Germany essayed to make a trial on her own account and was eminently successful in the long run, as the whole world knows. She watched every move of other ccuntries and awaited her opportunities. When they came she took advantage of them to the fullest possible extent.

Germany is essentially a manufacturing nation; her manufactures have been brought to a high state of bounds. Her population has increased by leaps and bounds. Her manufactured products grew until they far exceeded her own requirements. She had to expand. She sought fresh outlets for her wares and embarked on a comprehensive colonization scheme. colonies, however, presented too small a scope for her rapidly growing productions. She therefore sought to conquer the commerce of the world. She spread her trade expansion propaganda throughout the length and breadth of her empire and afforded every possible means by widespread publicity to prove the value of colonization. Yet as a colonizer she only met with a partial success.

#### Colonization Not to be Encouraged.

According to General John C. Smuts, German colonization (especially in Africa) is not to be encouraged. He states: "These possessions were to become great tropical estates for the production of raw materials for German manufacture. The idea resulted in great enclosures for corporations, ruled with an iron discipline and worked by forced labor, amounting to slavery, naked and unashamed."

That the immigration of whites to the colonies is not encouraged is borne out by the fact that prior to the war the area of German colonies was 1,027,820 square miles, with a population exceeding 12,000,000 of which number whites contributed a paltry 24,000.

General Smuts continues:
"It is instructive to turn from this picture and realize the freedom of the British dominions, where freedom and peace reign and where there is no coercion of natives, but a loyalty, which brings an instant response to the motherland's unexpressed call for aid in times of peril."

Until the middle of the eighteenth century, Germany's foreign trade was practically nil, on account of the laws then existing by which colonial trade was confined to the mother countries of the colonies, and trade with

foreigners absolutely prohibited.



This exclusive trading was a bar to Germany's aspirations, but later on in the century, when it was found that an interchange amongst nations would tend towards greater prosperity, the conditions became relaxed and Hamburg, as a free port, commenced business practically as a clearing house of nations.

With the Declaration of Independence came Germany's trade opportunities in North America, of which she took full advantage, but even prior to this she had begun to establish branches in Spanish America, chiefly through the medium of Spanish employees. Thus through underhand methods she early laid the foundation for her ultimate gigantic trade throughout Latin-America.

#### Steamship Services Established

Her vessels commenced to carry goods to all its ports. Regular services were established and have been maintained and increased ever since, until the outbreak of war in 1914.

A further fillip to her foreign trade was given when the Chinese Treaty ports were opened in 1843, by which all nations were treated alike, and in 1859 when the Indian Government lifted the embargo previously placed on foreign goods.

Germany then launched out and established branches

and agencies in the newly opened fields.

Having thus gained access to practically all markets of the world, she established banks in every country, many of them being branches of home institutions. She sent her representatives in all directions. instituted special business training schools and colleges. She thoroughly educated her sons intended for the foreign trade in various languages, those dealing in Spanish-America learned Spanish, those trading with French colonies were taught French, and so on, Finally she was represented in every country by men who had had a special export curriculum and could fluently speak the language of the country they wished to conquer commercially.

The merchants, backed up by the assistance of powerful interests (of which they frequently formed a part), were in a position through their foreign trade representatives to accurately gauge the financial standing of their customers, and when satisfied, the usual 60 or 90 days' credit was often extended to one or two years, especially for large orders or in the case of goods not commanding a very quick sale. Thus the exporter with a good credit virtually did not require to pay for his goods until he had cleared his shelves, and had himself received his own money plus his

profits.

#### Subsidies and Bounties Granted.

In quoting prices, her merchants were materially assisted by the subsidies and bounties granted by the Fatherland. This feature alone was a great handicap in Germany's favor against her great trade rival, England. By this means she was enabled to sell goods priced identically the same in England and Germany, lower in the British colonies, which were not then

protected by preferential tariffs.

When in England, I met a manufacturer of locomotives who had just returned from a business trip to Canada. His mission had been unsuccessful. He wanted to secure a contract for locomotive wheels from a Canadian railway company, which was then in the market for supplies. It was procured by a German firm, at a much lower price than he was able to quote. He decided to go to Germany to investigate, as he knew that the goods could not be produced at anywhere near the figures at which the contract was placed. He was surprised to find that the Govern-ment-owned railways in Germany were paying far in excess, for the same goods, of the prices paid by the Canadian company; in other words, home consumption had not only to make good the losses of the export trade, but had also to provide a surplus sufficient to pay the fat dividends declared by the factories. Their output, which was increased by export trade at a loss, was made good by the extra prices charged on home trade. Thus have the factories been built up at the expense of her inland requirements. The increased output of the factories resulted in keeping many workmen employed at home, who would have migrated to other lands, and by giving them continual and con-stant work a very high state of efficiency was obtained. By these means her organization was made complete. In this connection it is interesting to note a few words recently spoken by Chas. Duncan, an English Labor

M. P.:

"Every successful business is successful because it is well organized. Every successful business man succeeds because of his ability as an organizer. Organization is the only basis on which success can be achieved in business as in war, and it is because this country (England) has been slow to realize this in the past that we have not only lagged behind, but even our enemy (Germany) went steadily and surely on the right path securing world wide dominion in many com-mercial pursuits. Organization is better understood and more thoroughly and effectively applied in Germany than in any modern state in the world."

#### Getting into the Good Graces of English Firms

For many years German merchants had been sending their sons or nephews to England to gain experience.
They were nearly always able to speak and write at least two languages besides their own, (usually French and English). They were thus in a position to

act as foreign correspondence clerks, which but few English were capable of doing successfully; moreover they were prepared to accept an exceedingly low rate of wage. It was no uncommon thing in leading merchant houses or banks to find several German clerks. Backed up by funds from home, they were in a position to oust many Britishers, and by due diligence to their duties, obtained the goodwill of their employers. They were never in a hurry to quit work and frequently so ingratiated themselves in the good graces of the firm that promotion was rapid. Frequently they got such an intimate knowledge of the inner workings of the business that they made themselves almost indispensable.

In due course they might be sent abroad to relieve a foreign manager, or to establish a branch, or possibly, when the time was ripe, a friendly visit from the clerk's father would ensue, ostensibly unknown to his son, although, in reality, he would be well posted beforehand by his son as to the exact position of the firm's affairs, what the business was worth, and if a partnership would be entertained and if so, the probable terms.

The father would then call when he knew his son

was out, introduce himself, (he always knew the correct person to see) inquire how his son was getting on, possibly suggest that his pay was insufficient and that he ought to be doing better. The merchant, in return would give a glowing account of the future possibilities. The father would then throw out a hint that his son having mastered the intricacies of the business would not unlikely start in the same line, with plenty of financial backing, unless there was a chance of something more than a poorly paid clerkship. The result frequently was that before the father's return home a partnership in a good old established business was purchased.

Hundreds, probably thousands, of such cases could be instanced and in this way has German diplomacy made itself an important factor in the English mer-

chant house.

As an illustration of German duplicity, I would recite one case that came under my own notice.

#### How They Treated Trusted Agents.

A German electrical firm advertised that they wanted an agent for their goods in England. They were prepared to establish an office, to pay a small salary and a commission. A pushing young Englishman without any means applied for the job and was appointed to the vacancy, notwithstanding that hundreds of apparently big concerns offered their services, on even



better terms than the selected applicant. This was frankly told him and the reason given for his selection was, that they wanted a man to attend solely to their work, capable of rising with the agency to an important position as the business grew, that the entire management would be practically in his own hands, and that he was in a position to make it really what he liked, by his exertions.

By dint of hard work and careful supervision the business grew by rapid strides, and so good were his returns that in about 12 years he had saved money and amassed property to the extent of about \$50.000.

About every six month one of the principals used to visit the London agent, and apparently a most cordial and friendly relationship was established between them; in fact the agent looked upon the German merchant almost as a second father, and had such implicit confidence that his most private affairs were discussed with the German. On his return he warmly eulogized the agent, told him that he had always given complete satisfaction and that he had worked so indefatigably in his interests that he was practically safe in his job for life

The agent wanted nothing better. He knew his business, and he knew that he was appreciated as a good servant should be.

#### Must Invest Savings or Ouit.

A few months later the German came back and announced that as his business was growing so much he had decided to turn it into a company, and that all his employees were taking shares in the enterprise; finally he practically told the agent that he must invest \$50,000 (which sum he judged him to be worth) or lose the agency. He stated that he had already had an offer from another source on even better lines, but that he felt in duty bound to give an old and tried servant the first opportunity.

The agent knew that he was making about \$12,000 a year out of the business which he had built up. and that he would have great difficulty in either securing another agency as good or of investing his money in any business which could nearly approach these figures. He therefore decided to close with the offer, and had even to borrow the balance of the money required, after having mortgaged his property up to the hilt, so satisfied was he with the prospects for the future. The investment alone, apart from his salary and commission, looked on paper to be worth at least 121/2%.

The deal was closed and for a few months every-

thing went splendidly.

One day the agent was surprised at a visit from another German, who quietly informed him that his quondam friend had retired and sold to him his entire interest in the company, and that he had decided to open a regular branch in London, with his son as manager, and that the agency agreement would terminate at the end of the month following. The agent was further told that the company being a private one, there was no market value quoted for the shares, and that he must be satisfied with the dividends which he, as managing director should deem expedient to declare.

This occurred only a few month priors to the war. The company paid no dividends and practically all the profits were swallowed up by the gigantic salaries paid to the managing director, his satellites, and his son, as manager of the London branch.

#### Left Penniless and in Debt.

The result of working hard during the best years of his life for a German firm, left the agent not only penniless but in debt, with \$50,000 worth of very doubtful security tied up in Germany.

The London office was closed when war broke out, and the agent may think himself a lucky man if he ever gets anything out of the wreck after peace is proclaimed.

Of course, there are many who will blame the agent, but there always are a large number of people who are wise after an event. It must be borne in mind that he had worked with the German for upwards of a decade, in the utmost harmony and absolute confidence, and grown up with him from a young beginner in husiness

The illustration goes to prove how deeply the Germans lay their plans and how patiently and with what an amount of confidence they prepare for "the day."

I well remember late in the 70's the outcry that went up throughout England, regarding foreign competition and buying goods abroad. The papers were full of it for weeks, and the British manufacturers were highly indignant. It was practically directed against Germany, who by this time had commenced to deluge the many, who by this time had commented to defuge the market with her cheap goods, many being copies of British made articles, but infinitely inferior in quality, and considerably lower in price. The ultimate out-come was that every article imported had to be branded with the country of origin, and "made in Germany" became a household word.

#### Prices Lower in London Than in Berlin

It was possible to buy goods manufactured in Germany, retail, in London, cheaper than in Berlin. Warranted "Sheffield" cutlery was often found with "Made in Germany" stamped on it in small type.

In Canada, Australia, South Africa and in fact throughout all the British possessions the same con-ditions prevailed to the detriment of the British manufacturer.

This was rendered the more possible by Germany subsidizing her steamship lines, and by the low rate of wages paid to her workmen, added to which the surplus of the German factories had to find an outlet. Hence the loss that was at first made in her export trade was made up out of her home trade and her own people had to pay more at home for the same goods, sold at less, abroad.

In the early 80's a Hamburg firm entered into a contract to supply the English workhouses with coffins for their paupers, at a considerably lower price than they could be procured locally. Shortly after, owing to strong protests being made, a prohibitive duty was imposed and the German contractor was faced with a losing proposition. How to solve the problem was the question.

At this particular time, enormous quantities of eggs were being imported into England from the interior of Hungary. They were allowed in free of duty. The German coffin firm undertook to deliver them at a reduced rate of freight, on a through bill of lading from Hungary to England, provided they passed through Hamburg and that they were repacked there.

The contract was signed, the eggs were delivered in the coffins, and marked, "boxes of eggs the product of Hungary."

of Hungary.

The trade got rather a shock at the shape of the new containers, but the coffin contractor was able to smile at turning what looked like a severe loss on his contract, into an extra profit.

### Banking and Educational Methods Adopted

The fact that practically all shipments were financed through England at rates not favorable to Germany, led to the establishment of the Deutsche Bank in 1870, with the object of further developing her foreign trade. Its prospectus states:

"The object of the company is to carry on banking business of all kinds, particularly in the furtherance and facilities of commercial relations between Germany, the other European countries and overseas markets.

After establishing an agency in London it assisted in the formation of "The German Bank of London" and was thus enabled to deal with German bills on the same basis as English banks. This had hitherto been impracticable owing to Germany having no gold standard.

Some two years later the Deutsche Bank opened branches in China and Japan and financed subsidiary banks throughout all the countries of South America and Mexico. Other German banks also commenced to branch out in the 80's, so that by the latter part of the nineteenth century almost the whole world was literally honeycombed with German financial institutions, which were of the greatest assistance to her traders and merchants.

Most of the large German banks which have capitals ranging from \$25,000,000 to \$50,000,000, are practically sponsors for numerous smaller local banks, operating at home, and also closely allied with the leading industrial undertakings and railways abroad. The five great German banks represent combined assets of close on \$1,000,000,000 and as virtually this is all available for the requirements of foreign trade her position in this respect has become practically unassailable.

#### Factories Established Abroad.

Another instance of their ingenuity is interesting. When duties in foreign countries rendered business impracticable, immediate steps were taken to reconnoitre the possibilities for the establishment of German factories, and if sufficient inducement offered they were immediately equipped for business. This was largely the case in Italy and Russia, which latter country was only just awakening or rather being awakened by Germany to the value of her own resources and potentialties. Further afield, throughout South and Central America, their capital was introduced into plantations consistent with the countries and also throughout the Dutch East Indies, while in Mexico and Australia large mining properties were brought under their control. For years the output of some of the largest Australian mines had been handled by German capital, and a contract entered into that, even in the event of war, these Australian mines should continue to supply Germany exclusively with all the smelter products of her silver lead mines. When the contract was made Australia little thought that she would herself be at war with Germany, and at the outbreak, some twenty or more huge vessels were lying at the wharves loaded ready to proceed to Germany. The Australian Government, to their everlasting credit, immediately sized up the situation and passed a law, at a specially convened session which lasted all night. canceling all German contracts, with the result that both ships and cargoes were commandeered by the Commonwealth.

#### Dominate China Silk Business.

Again in China, German finance was so interwoven in the industrial trade (chiefly silk and cotton) that the entire business if not absolutely controlled, was dominated by Germany, and German prices would sway the market just as required, but always with a preference towards her own people. Usually, the bank financing industrial undertakings in Germany is either a co-partner in the concerns, or has one or more Directors, common to both institutions. The import and export concerns accept long dated and renewable bills, discount them through the banks they are associated or co-partners with, and thus are themselves enabled to give extended credits.

The trading banks are most comprehensive in their sphere of actions, for, apart from granting long credits, they also grant loans, make advances on all classes of shipments and discount long-dated bills, and in certain cases guarantee fulfillment of contracts as well. To all intents and purposes they often become company promoters, and their ramifications are so complete and far-reaching that they frequently control the business of large industrial undertakings, to the material benefit and advancement of their export trade.

One great factor which tended greatly towards the success of German banks abroad was, (apart from her own colonies) the German emigration to all parts of

the world. In many parts they founded industrial colonies of their own, retaining their own language and customs, building their own schools and training and educating their children in German methods. In many cases they were eminently successful as traders or agriculturists; all their sympathies were with the Fatherland, their trade was with the Fatherland, and their banks were the banks of the Fatherland, or their subsidiaries. To such an extent was the life absolutely German, that there were many cases where the United States consuls advised that correspondence with the traders should be in the German language, and goods quoted in marks and according to the German measures.

#### Great Exodus to Foreign Countries.

When one takes into account that the exodus from Germany from 1871 to 1900 was nearly 2,000,000 and from 1901 to 1914 close on another million, it is small wonder that with the old home instincts strong on them, German trade and banking should have received vast support wherever these industrial settlements occurred.

One illustration of German duplicity should for ever put Americans on their guard; and it is a method of securing trade which our enemies have very frequently used to their own advantage. In cases where American goods ruled the market and were preferred to those imported from Germany, or where there were perhaps no Germans doing business, it was no uncommon thing for a new firm to spring into existence, to learn the requirements of the locality, give a small order to American manufacturers for the commodities most used, ship samples home to Germany, have them accurately copied, and flood the market shortly after with identical copies of the same goods, imported from Germany, and frequently sold at a lower price.

#### Trade and Banking Hand-in-Hand

As the whole world over, trade and banking naturally go hand-in-hand, so in Germany the business schools and colleges before mentioned, not only train their sons for business but for banking as well. Their system of vocational training is well-nigh perfect. Their schools of commerce are Government institutions. There are trade schools for the higher technical education of the mechanic, so that he can perfect his products. There are commercial schools for salesmen to learn the most approved methods of pushing these perfected products the whole world over. No detail, be it ever so trivial, is omitted. The curriculum is so comprehensive in these schools, that the teaching not only embraces all European languages, but even extends to Russian, Persian, Chinese, Japanese, Arabic and Hebrew, and still further to local negro and African dialects.

#### How She Expanded Her Shipbuilding.

In her merchant marine, Germany, apart from subsidizing every line en route to every part of the world, carefully avoided any duplication of routes. The enormous quantities of raw materials necessary for shipbuilding were all available at very low prices, and when long haulings were required, specially low rates of railway freights were conceded by the Government owned lines. These were all factors that tended to keep the costs of her boats down and added to this was a low wage scale and duty-fee importation of any articles required in shipbuilding construction.

In the first half of the nineteenth century she started shipbuilding schools to scientifically teach wooden shipbuilding. These wooden boats made vast profits and were the nucleus from which she derived funds to provide for the financing of her new steamship lines. This system has all along been rigidly adhered to and the outcome has been the mighty lines which she operated until the war cut her off navigating all the seas of the world.

#### When Iron Supplanted Wooden Vessels.

When the new era of iron ships superseded wooden vessels, for years Germany was compelled to get her vessels, for years Germany was compened to get ner vessels built in Great Britain, owing to the fact that she had not learned the correct method of handling iron for this purpose. Later she commenced building on her own account and after a brief period, not only constructed all her own steamers and battleships, but even built many for foreign countries, including China and Japan. But it was not until 1895 that her Government forced shipbuilding in the Fatherland, by providing subsidies to vessels carrying mails, conditionally, that they were built in Germany; and for this purpose every kind of material required in their construction, from rope to anchor, was admitted duty free; further, specially reduced railway freights were granted for the transport of these goods across country to the shipbuilding yards.

In order to foster her export trade the same low freights were also extended to her manufacturers, for conveyance of goods for shipment. In addition to this, by her methods of financing foreign railways, she was able to grant her manufacturers through bills of lading on many lines, at far lower rates than could be obtained by other countries. These preferential rates placed her in a far more favorable position with such countries as Bulgaria, Turkey, Roumania, The Levant and East Africa, from all of which countries she had obtained Government concessions, largely due to underground finance.

#### Large Mail Subsidies.

Her mail subsidies to steamers, which amounted to over \$1,000,000 per annum for a period of 15 years, called for thirteen voyages a year to Australia, China and Japan, and twenty-six to the Mediterranean, with a 20 per cent reduction of freight for all Government goods and passengers. Some years before the expiry of this subsidy, the Government, finding that the service was neither large nor swift enough to compete with other countries, made new arrangements and increased the subsidy by \$300,000. Under the new contracts additional service and faster boats were required, which were to compete on identical terms with foreign competitors, but without the prospect of any further additional subsidy, no matter at what rate progress was maintained.

With the view of connecting up for Island traffic, With the view of connecting up for Island traffic, a subsidiary line between Sydney, New Guinea and Singapore was inaugurated in 1901 and was subsidized to the extent of \$28,560 a year. The German East African line was started in 1890 with an annual postal subsidy of \$214,200 for a period of 10 years; this entitled this team recognizes annually from Hamburg to tailed thirteen voyages annually from Hamburg to Delagoa Bay and an extension to Zanzibar. On expiry the subsidy was renewed for another fifteen years and increased to \$321,000, but called for the use of faster vessels and an alternative route via South African ports.

The ideas of these subsidies were twofold; to foster her trade, and also to direct her emigrants to new countries and point out new markets to her manufac-

turers.

#### Increase in Merchant Marine Tonnage.

In the short space of twelve years her merchant marine tonnage increased 270 per cent, until at the end of 1912 it exceeded 3,153,000 tons. Her shipping interests are worked upon lines very similar to her banking, inasmuch as she has seven giant shipping companies operating over 3,500,000 tons and about forty smaller institutions which are practically con-trolled by the larger ones. With the assistance of the subsidies virtually every portion of the seas was covered by German companies. Sailings were regular, lines were not duplicated, and thus competition was only directed against carriers of other nations, and on terms specially favorable to Germany, her traders and manufacturers. Needless to say the American trade

was amply catered for, and in 1911 The Hamburg-American line alone carried 403,000 passengers and 7,990,000 tons of freight. In the same year the North German Lloyd took 514,000 passengers and 3,590,000 tons of freight.

tons of freight.

The special railway tariffs, previously referred to, were largely framed in the interests of export trade. In order to foster specific industries or to favor particular individuals, reduced rates were granted. Further, the larger the shipment, the lower was the rate charged. This measure was largely aimed at the diversion of traffic to certain given ports and with the idea of furthering the interests of particular steamship lines, in some of which the kaiser himself held large interests. In the case of reduced rates to for-eign countries, by means of through bills of lading, over lines in which German capital had a controlling influence, she was in position to defy competition. By the reduction of these tariffs on raw materials and partly manufactured goods, and by raising the rates on imported manufactured goods, she was enabled in her own country to create absolute trade monopolies for her own manufacturers. Again, her railway concessions were made to extend to various contiguous centers, and by this means she secured much freight from her neighbors, for her ships to carry to the ends of the earth.

#### Foreign Office Supplies Minute Details.

The German Foreign Office received from its different agents and consuls the most minute reports and details connected with every branch of trade, customs tariffs, possible markets, volume of trade, crop reports, and in fact everything in any way pertaining to all countries, in which there was even a remote possibility of trade. Every detail was studiously collected, carefully collated and published in book form for her merchants. They are at all times open for inspection free of charge, but are supposed to be for the exclusive use of sons of the Fatherland.

Their Foreign Consuls are virtually placed in the position of commercial agents, as they are required to furnish financial reports to merchants, of possible customers, and have also to assist in forming connections, between the merchants doing business in their sphere of operations and those in the home land, desirous of trading with them. In order to deal with such matters to the greatest advantage, the consular officers receive special commercial training for this class of work. That the positions are lucrative may be readily judged, from the fact that they are paid no salary but are remunerated solely from "consular

#### Consul's Function Related.

An interesting illustration of a portion of a consul's functions is related by a prominent San Francisco broker. A short time before the declaration of war by America on Germany, he had occasion to visit Berlin. Upon calling at the Foreign Office to establish his bona fides, he was surprised to find that the department had a complete history of his commercial life. He expressed surprise at this, as his dealings with Germany, either direct or indirect, had been of the slightest. The card was exhibited to him, and he found it went into the most minute details of his financial standing, his banking facilities, the names of his chief customers and in fact he said, "they knew more about me than I knew about myself." In order to elicit information, he himself made inquiries concerning one or two small American firms, and in every case found that most complete details were filed.

Another point which has stood Germany in good stead, is her multitudinous trade associations. This banding together of different classes of trades for mutual benefit, has had the effect of reducing costs, fixing prices, and the general advancement of interests, which has been rendered far more possible by such amalgamations, than could ever have been the case with the individual, who would have had to bear the

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whole brunt of the financial strain personally. By this means too, over production would be partially curtailed, and the association would direct its members towards new markets, or advise which markets required additional supplies and which were over supplied. By the associations keeping in direct touch with their representatives abroad, they were able to furnish much valuable information at a minimum cost.

#### Advantage of Association Over Individuals.

Against such associations, the private individual, acting as a unit, would be compelled to keep at enormous expense an army of trade reporters in order to be in the running in every center in which he was trading, and, frequently carried away by optimism, his reports might prove to be inaccurate, which would not be the case when reports came from the association's representative, who would have only one course to adopt; to report faithfully each and every circumstance connected with the trade or the possibilities of his special market. Relying solely on his salary and not on the turn-over of business, as might be the case of a private agent, he would be far more likely to give an accurate forecast of requirements. In this way the absolute truth of the situation would be made plain to the association, and its members would receive practically an assurance or O. K. mark of the trade to be done, and the risk of failures would be reduced to a minimum by this system of united action by associations, which were formed for every purpose and by every trade throughout the length and breadth of the Fatherland. Frequently the associations were the means of forming pools for manufacturers. Large orders of standardized goods would be farmed out to the factories according to their capacity; by these means all plants would be kept busy and each would get its quota and without any price cutting. These associations which exist for all purposes and trades number upwards of 5,000. They have played a very important part in German export trade and the system is well worth attention.

#### Her Special Study of Foreign Markets.

Undoubtedly one of the greatest factors in Germany's success in foreign trade has been the great and untiring attention she has paid to the study of her customers, their methods and their requirements. As a start no trade emissary left her shores without an accurate and intimate knowledge of the language of the country he was visiting. He would not only be able to speak and write the language fluently, but usually knew probaly two or three other tongues, which he would have learned in the commercial schools before referred to. He would never be in a hurry to push on from one country to another, or even change from one city to another until he had made a complete study of his possible customers. He would never try to force the products he had for sale, even though they only differed slightly from those in use in the locality, unless he saw that the customer was favorably impressed by them. Then he would bring forward his best selling methods, but never in an obtrusive way. He would attempt to see with his customer's eyes and would accept his specification and manufacture to it exactly.

Trade in Fencing Material.

Illustrating this may be cited the enormous trade Germany developed with Australia in fencing materials. For generations this trade had been entirely British, and Australia had been compelled to use what she could get. The British factories looked upon the trade as theirs almost by divine right, and, notwithstanding the fact that many representations were made to them for a different class of steel wire, light and strong, they declined to furnish it. Doubtless it would have entailed considerable changes in their factories, and Australia would swallow what was sent, was the British manufacturers' idea; so why go to the extra trouble? Germany instantly saw her opportunity. She sent experts to capture the trade and she succeeded in doing so

to a very large extent. These experts were successful in producing a very high grade steel wire, capable of covering twice the distance the British wire would; one that would not snap with the winter's frests nor sag with the summer's heat, and one which would always remain rigid and taut. Although higher in price nominally, in reality it was far cheaper, as one ton of German wire would accomplish the work of two of the British article. Being more suitable to the climate—it was specially prepared after severe tests in both summer and winter and the exact article produced by scientific study—the trade grew apace. It was also much cheaper in the matter of cross country freight charges, being only half the weight of the British production; added to which the farmer found his teams could do in one trip what under ordinary conditions would have meant two. Considering that frequently the distances to be traveled by team meant many miles, the saving in time as well as cash was of vast importance.

By this instance of adapting themselves to the requirements of the trade the Germans soon won out. When in time the Britisher's orders became fewer and fewer, he began to analyze the situation and not till then did he set out to produce the required article. He then set sail in hot haste after the lost trade, but by this time the German brand was well established and sought for, and it proved a very difficult matter to reestablish the British article. In fact had the war not eventuated, the strong probability is, that the trade would very largely have remained in German hands. This is only one illustration, but it is applicable to hundreds of other materials and shows how German methods "got there."

In many of the half civilized countries, where the natives require the cheapest materials and the gaudiest colors, the average American house will endeaver to sell goods similar to those used in the home trade and is not willing to adapt himself to circumstances. Needless to say that when Germany entered the market in competition, and made an article as required, she

swept the board.

#### Excels in Packing.

In packing also she excelled. Not only did she economize in space, but she put up her goods in containers that not only appealed to the country she was trading with, but which were of after use to the natives, and were of great value to the merchants as an advertising medium, in fact, it frequently occurred that the containers virtually sold the goods.

Germany scored greatly in practically making her export trade her means of existence, whereas America frequently treated it as a side line, and looked upon foreign orders only as a means of disposing of her surplus when home trade was dull. The difference adopted in these methods was naturally entirely in favor of the Teuton.

The American, and to a little less extent the British were on the lookout for cash transactions; not so Germany. Her banking ramifications were perfect, and so intimate was her knowledge of the financial standing of her customers, that she would frequently give long credits and thus secure the trade, her customers being willing to pay for the extended accommodation.

Again U. S. exporters often declined to quote, or were unable to quote for goods upon any other terms than f. o. b. factory. This method did not suit many foreign countries. Germany adapted herself to the position and promptly quoted, when desired, C. I. F. warehouse at destination. By her careful tabulation of details she was even in a position to quote for far interior towns, even when transportation had to be made on camels, mules, etc. This she was only able to do by careful study of the usages of the country with which she was dealing, and she accurately sized and packed her merchandise to meet the requirements of animal transportation. Each class of animal was known to be capable of only carrying up to a certain weight, and for the purpose of proper balance, parcels

would be made of equal weight so that the animals would give the greatest efficiency by being properly loaded with similar weights on each side,

#### Attention to Details Pays.

It was by details such as this, that step by step, and with great patience, Germany has built up her trade. She has gone to infinite pains to find out exactly what her customers require and has supplied it accurately to specification, never attempting to substitute other articles for the ones ordered, although often adoity leading her customers towards her own styles, and in this she has been greatly assisted by the German colonies in foreign countries, before referred to.

Until recently. American shippers frequently sup plied goods to foreign countries packed as they would distribute for home trade, and entirely ignored the usages of the importing country. This was never done by Germany, who was kept posted up to the minute, in every detailed requirement of her customers. The American method often resulted in loss to the importers, through ignorance of foreign methods, or through ignoring instructions given. The German never failed in this way, and thus secured much valuable trade which might logically have come to the United States. In other words Germany has deliberately nursed and fostered her foreign trade, while we have treated it in a more or less haphazard way.

The same applies to the careful way in which she

has selected her foreign representatives, both Govern-ment and private. They are carefully schooled in every way and only those attaining a high state of efficiency are selected. Compare this with our more or less happy-go-lucky style of sending a representative, probably with but little or no training, with no knowledge of the language of the country he is attacking, and often appointed because he has proven a good salesman in his own home town. Which is the more likely to succeed?

#### Supplies What Customers Require.

The idea that Germany only exports cheap goods is a very erroneous one. She supplies what is required by her customers. True, she has specialized in cheap goods because she has recognized a practically un-limited worldwide market exists for this class of goods. The natural result has been her unparalleled success.

Of material advantage is the fact that, in many cases the German manufacturer produces his goods solely for export, and specializes for the varied tastes of his customers exclusively. This plan is but little followed by other countries, many of which only use outside countries as dumping grounds for surplus stock. Germany has made her home requirements subsidiary to her foreign trade. Until recently with us it has been a sideline.

She has also made herself master of the foreign customs charges, which are so varied in different countries. They are too long to recite in a brief article, but, suffice it to say, that especially in South and Central America, the utmost caution must be used before attempting to embark in these trades.

I do not think I can conclude this article in a more

fitting way than by giving the following quotations, from two widely different sources, but both bearing on the question at issue. They tend to show the infinite pains and trouble Germany has taken to secure her footing and having once done so, the great care she evinces in retaining her position by her particular attention to detail.

American Consul General at Hongkong states:
"The aggressiveness of Germans in this market is
a subject of remark; they are hard workers; their
young men learn the Chinese language, and they leave
no stone unturned in giving the Chinese buyer what he wants in the way he wants and not what a seller thinks he should have. The Germans, to a considerable extent, maintain offices in the United States to secure for themselves the profits on such American goods as can compete. They watch American prices and ideas

and forestall the same if possible. They enjoy the advantages that come from shipping in their own vessels, enjoying an income from acting as shipping agents

therefor."

"The Imperial trade correspondent at Hobart reports

"The Imperial trade correspondent at Hobart reports of fancy goods states that one of the largest importers of fancy goods states that German manufacturers are particularly attentive to detail, especially in packing and putting up the goods in an attractive manner for convenient handling and shop displays. His experience was that the commonest kind of German goods were packed and put up infinitely more attractively and carefully than British goods of perhaps twice and three times their value."

#### Conclusion.-After the War?

However much we may despise and loathe Germany, we must admit she is thorough. Thorough throughout. Thorough in war, thorough in commerce, thorough in everything; and it is this very thoroughness which makes her such a hard nut to crack. While her thorough training for generations for war made her such a formidable enemy in the field, so her thorough training in commerce has made her equally thorough training in commerce has made her equally powerful as a trade rival. She was as prepared for war as we were unprepared, and the same applies to trade. We are only now awakening to the preparations for both these great issues. Dr. David Starr Jordan likens German culture to "a building with every man a brick in it, but of the nature and purpose of which he knows nothing." This is an illustration of their thoroughness of purpose of sinking the inof their thoroughness of purpose, of sinking the individuality of the person, of their system of delving to the very roots as they have done in their educational and technical schools. Every one is educated towards a definite end in life and grounded in details to the

The question of a trade boycott for long years after the war has been widely discussed and advocated. Should this be found practicable or feasible, it would undoubtedly teach Germany a lesson that she would not recover from for generations. To guard against this she has kept as many nations neutral as possible and placated them in various ways. True she has mercilessly sunk their shipping, largely with the idea that no nation, neutral or belligerent, should be in a better position for the carrying of overseas commerce than herself when peace comes.

## Would a Boycott Be Effective?

The loss of all her colonies, from which she used to secure large supplies of raw materials, will be greatly felt, as even if able to obtain supplies elsewhere, it must be at greatly enhanced prices.

The question of whether a trade boycott could be made effective is one Germany is seized of and already she has been preparing for after the war, by arrangements with neutrals. The following extract from the "Wirtschaftszeitung der Zentralmächte" denotes to what utter depths of deceit she will descend to recapture her lost trade.

"If we proceed on the assumption that the attitude of customers throughout the world toward German goods is going to be that of 'passive resistance,' it is clear that we shall have to resort to commercial mimicry. Everything that comes direct from Germany or that bears traces of German origin will at first be very difficult to sell. Our whole trade will have to go through neutral lands. This will mean both an increased danger of the imitation of German articles, and also an increase in cost of production. This, however, should not hinder us from applying this method, as it is not meant to be adopted permanently, but after the war the foreign market will require considerable time to accustom itself to German products. Nor should moral scruples deter us. The neutral will be indispensable to us after the war as an intermediary, where we can not reckon upon a free and open market in the country itself. Every German business man might do well from now onward to adopt as his modus

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operandi the renewing of his connections with his reliable agents in neutral countries, and removing from his goods every prominent indication of their nationality."

But, in order to enforce such a boycott we are up

against a gigantic proposition.

Except under war conditions, would it be possible for the Allies to impose conditions on neutrals which would practically direct their shipping and control their trading operations? An important fact, which has to be taken into consideration, is that although allies for all purposes new, immediately after the war we shall become trade rivals. Unless any one nation is sufficiently strong financially to form a corner in any commodity she requires, quantities must perform filter through to Germany, per the medium of neutrals.

#### Can We Prevent Her Getting Supplies?

Admitting that she is desperately in need of virtually all raw materials, how are we going to prevent her getting supplies? A dozen instances might be given, but taking rubber as an example, it may pay to analyze the situation.

The largest rubber producing countries in the world are the Malay Archipelago, Brazil and Java. If we are prepared to enforce the boycott we shall immediately inflate the prices against ourselves by purchasing the entire output of all producing countries, for undoubt-edly Germany would be prepared to pay almost any If on the other hand we are not prepared to do this, and even should the allies form a combine after the war, we cannot compel Java to join in with us, and her supplies as a neutral, might readily be procured by Germany, provided she were ready to pay the required price. This one illustration is typical of many others that would run on parallel lines. Another thing we know is, that already in neutral countries, and also to a lesser extent, through neutral agents in allied countries, large supplies of raw materials have been purchased at prices considerably in excess of the market for delivery after the war.

Would it be possible for us to say to these neutral purchasers, "No, you shall not have these goods?" Surely the agent, who in some cases might be acting in perfectly good faith would have good grounds for legal remedy, and our judges would be kept pretty hard at it assessing damages.

#### Would Like to See Boycott.

That we should all like to see such a boycott is certain, but it appears to be straining after the unattainable. We may be in a position to hamper her and retard her very greatly by united action in the prevention of direct trading, but it is inconceivable that an absolute boycott, desirable as we might consider it, could ever be brought about,

A busy trader always has the idea of converting his purchases into a profit, and a neutral buyer would be justly entitled to turn his goods over to the highest bidder, irrespective of nationality. A neutral might buy cotton for instance, with the idea of manufacturing, but on being offered a price, which would yield him as much profit as if he manufactured, without all the attendant labor and expense, would be considered foolish and even quixotic to turn down so advantageous an offer. Even assuming the neutral undertook not to sell to a German, he might readily pass it on to a second neutral, the second to a third and so on, until finally the product would come into German ownership, for all of which Germany has carefully prepared beforehand. True she may in some instances have to pay greatly enhanced prices, but this she will be prepared to do freely, for she finds the products absolutely necessary to her; by degrees the tensity of the situation will wear off and with newer generations springing up become almost normal. While the prices may be too high for her to turn the raw materials into manufactured goods for export,

her home requirements for a very long period will be so great, that she will only supply her home demands, until normal prices once more come round.

#### Will Keep Factories Going Full Speed

Meanwhile her factories will be kept going to full capacity for her own home trade, and that of the Central Powers generally, and for export trade she will depend on those goods—chiefly hardware, metals and the like-in which her own supplies of the necessary raw materials are practically unlimited. In these goods she will specialize and try to force herself once more to the front, and will as before be materially assisted by her low rate of wages and her large steamship subsidies, which may in all probability be still further increased.

With a victorious peace for the Allies, must come a radical change of Government in Germany, and with the removal of the Hohenzellerns a more liberal and popular administration must eventually follow. This in itself would pave the way for a better understanding and the British sense of fairplay would be worked on to the utmost by the new order in Germany. Mr. Gerard in his book "Face to Face with Kaiserism," very aptly illustrates what may happen after peace is formally de-

clared. He says:

"Imagine after this war in some distant island, perhaps, a Frenchman, an Englishman, an American, a Portuguese, an Italian, all steated at the dining table of a little hotel. A German comes in and seeks to join them. Will he be treated on an equality? Will he be taken into their society? Or will he be treated

as a leper and a pariah?
"The German will wish to be in a position to say: 'Why, gentlemen, I was against all these crucities. I was against the sinking of the Lusitania and the murder of its women and children. I was against the starving of Poland and the slaughter of the Armenians and the crucifixion of prisoners, and we Germans have thrown out the government that was responsible for these

"Stronger than any other consideration will be the have made the Germany of today a Cain among the nations—an outcast branded with the mark of shame."

## The Average American

The American as a rule is wholly incapable of understanding the idiosyncracies of those who come to make their home with him. That they are different, that they think differently, have different standards of values, he is keen enough to see; but for the most part he looks upon these racial characteristics as aberrations that will pass out of existence when the newcomer goes through that process which he calls Americanization. On the newcomer's ability to lay aside his old preferences or prejudices depends the quality of his citizenship. That these prejudices or preferences have reason for existence the average American does not suspect; to him they are simply evidences of queerness, greenness or backwardness. This attitude functions very successfully in the United States, which naturally has no racial customs, but merely national habits—habits bred out of some necessity, some experience and some composite bent derived from the various races that enter into that mysterious non-existent individual called "the average American." But when the American goes abroad and encounters racial characteristics and customs en bloc instead of in the isolated individual who has been transported from his native land, the American simply shakes his head in wonderment and inwardly takes the Lord to task for creating people so wayward and unenlightened. Confidently he looks into the future when all this will be changed; all he wants is a sufficient number of Americans like himself to form a solid fighting phalanx to charge through these worn out old customs and usages which hinder trade and the development of the country that he happens to have in mind for reformation.

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Missionaries in Heathen Lands

It is not for nothing that there are so many foreign missionaries from America in the backward heathen lands, and if the truth were only known it would be admitted that perhaps more American business men have worn the crown of martyrdom trying to bring heathen business men to his creed of business than missionaries who have suffered in the cause of Christianity. All up and down the hot countries, around the tropical belt of the world, wherever there are polyglot gatherings of traders they tell with smiles of some Yankee who broke his health and perhaps his firm trying to make the natives do business in the American way. The fact that it cannot be done doesn't seem to daunt a certain type of American foreign trader. That several generations of his predecessors have tried and failed is not sufficient to discourage him. He tries, fails, and eventually settles down to do in Rome as the Romans do.

The American being a one-language individual seldom knows what the foreigner thinks about him, except such laudations as a foreign opera singer may utter to the New York reporters to pave the way for a successful tour of the country. Or perhaps Lord Soandso or Count Thisandthat may, when asked point blank, admit that he has always admired America and Americans and hopes to know them better—especially the feminine Americans, of whose charms he has etc., etc. All very complimentary and perhaps even polite, but not in the least informative. Pleasant at conversational flattery but without profit.

#### Worthwhile Observations

Occasionally a writer with wit and brains makes some observations about Americans that are worth consideration by Americans. This is all too rare, as the role of guest is hardly the proper one for the critic. One who has treated Americans kindly yet frankly is Maria Moravsky, whose recent article in the Atlantic Monthly, "The Greenhorn in America," discloses as many of the Russian as it does the American characteristics. Russian characteristics are to become more and more important to Americans and especially to those who live on the Pacific littoral. The star of empire seems to be shining over Siberia just now and the Siberian and American must come to some understanding as to their methods of doing business. All this gives point to Miss Moravsky's pleasant twitterings of Americans. She finds as her chief disagreement with us, half humorously, it is true, but still half seriously, that Americans are too punctual; that 9:30 a. m. means just that, not 9:45 or 10 a. m. Americans are, as many many others have told them, too much in a hurry. They know how to do business, but they do not know how to live; they are remarkable for quantity of production but unskilful in the matter of putting a soul into their work.

#### What Russians Think of Us

In a general way all this will have to be admitted, with some reservations and with plenty of retaliatory accusations, etc., etc. It is most important for the American business man to know what the Russian business man thinks of him and his methods, for the psychology of business is coming to be recognized more and more as in-telligent experience finds its way into circulation. Your ordinary and even extraordinary political economist would never think of noting in his laws of trade that a great deal of trade is gained or lost by reason of wholly ir-rational preferences or prejudices. Perhaps on the whole, over a long period and a world area it may be set down as an economic truth that a man will buy in the cheapest market, but for the individual seller it is more important to know that certain people have what may be silly uneconomic ideas and that these ideas must be consulted, humored and satisfied if trade is to be profitably carried on. There is much therefore for the American to learn about the ways of dwellers in other and distant lands, but there is likewise much for those distant ones to learn about the American and his ways. Even critics so kindly as Miss Moravsky, while commenting on the American trait of hurrying, and attributing to it the success the country has achieved, do so in a manner which makes clear that on the

whole they look upon it as unfortunate and consider their own leisurely methods more desirable. There is here, it will be seen, a confusion between business and sociology. American business methods are judged according to sociological standards, overlooking the fact that the American in business relations is one man and in his social hours another. He works when he prefers and plays when he plays, and if he works too hard it is because work eventually gets to be a sort of play with him.

#### Punctuality Has Made America

It is precisely this punctuality, this getting to the office on time, keeping all engagements on time, doing it now, that has made America. Russians, like Miss Moravsky for the most part believe that the United States has grown to be a tremendously powerful and wondrously rich na-tion because of its democratic government. This is a confusion of cause and effect. The American people have made their government; the government hasn't made the people, and this entirely fortunate circumstance it is that makes it possible in this emergency for the United States to have billions of dollars to loan to those other nations who looked with good-humored patience on American aggressive industry in years gone by. The American is not a contemplative soul, neither is he lazy. In fact, the American soul is entirely unconscious of its own existence, and wastes very little time in looking into itself or trying to understand itself; if it has a big job to do it gets to work early and works until late, patiently and methodically. Perhaps this soul ends its career with indigestion or suffers a nervous breakdown at an early age, but it has had something of material value to show for its efforts, even if the spiritual content may be small. America does not produce wonderful dancers, like Russia; they are lacking in music, literature, all the arts if you will, but the world today is not clamoring for pictures, poems or masterpieces of genius but for plows, shoes and something to eat. America runs more to cost systems and factory management and as a result has the necessary plows and shoes. Her farm tractors are not beautiful but they are cheap of operation, low in upkeep costs and are designed with such mechanical simplicity that any person of ordinary intelligence can work with them.

#### Statistics Necessary Factor

Any attempt to discuss American farm tractors in a literary way would be blocked at the outset by the necessity of dealing with statistics; no novelist would think of putting his hero on a farm tractor, no poet would think of writing a sonnet about one of them, and a painter would have cold chills were any one to suggest that he utilize a few cents' worth of colors and a few days of his time in painting one of them. Yet in their homely, efficient way they are feeding some millions of people who have an ear for music and an eye for color, which for the most part are denied to the American farmer.

American railroads are rather hideous things. The locomotives have a certain beauty of efficiency, that quality of strength that Pennell can put on paper, but it must be confessed that this is a matter of accident rather than the design of the builders. What could be more hideous than American trolley poles? How different they are from those in European cities, where the decorative quality of every article of public utility is considered. But it must be admitted that they help transport many millions of men and women every day with more or less success, even if discomfort for the most part exceeds comfort.

#### Usefulness of the American

For the sake of the world at large it is perhaps no misfortune that the American is a utilitarian first, last and all the time, and that it is not until he has reached the limit of usefulness that he sets about to make its works beautiful. Otherwise there might be considerably less for the world today.

While critics of America may lament the harsh, uncompromising code to which the American business man holds himself; while they may deride his time clock, marvel at his gustatory haste at the luncheon hour, and hold

up their hands in horror at his endless preoccupation over his business, they will, if they are fair, admit that it is the system that brings about results. Says Miss Moravsky:
"I notice to my great surprise that not laborers only, but

even professionals, must do their work scrupulously on

The doing of work "scrupulously on time and hurry,"
wherey, hurry, is what turned America over night into the world's greatest shipbuilding nation.

#### Not Ways of Foolishness

It is just as well to give the American due credit for his achievements and to point out to those who are going to do business with him that his ways are not entirely the ways of foolishness; that if he is abrupt, hasty, and a bit intolerant of the ways of others, that his system is not wholly bad, and that for Russia perhaps it would be even of more value to adopt it than to rid itself of a czar and a bureaucracy. It was the defects of Russian character, the incapacity of the Russian for sustained, methodical, unbeautiful effort that made czardom and its attendant evils possible. Americans might submit to the autocracy of a czar but he would need to be an efficient czar who

came to work on time.

On the other hand, it will be well for the American business man dealing with the Russian to make up his mind that the Russian's theories of life are not the whims of a moment, but the product of long centuries of development, and consequently whether or not they are fitted for this particular age, they cannot be altered to order. The this particular age, they cannot be altered to order. Russian will probably continue drinking his weak tea during office hours and making his business relations, outwardly at least to partake of some of the appearance of a social visit. All this may be irritating to the American who is anxious to close up "his deal and get the next train for Omsk," but he will have to submit to it with whatever grace he has at his command. The Russian is partly Oriental and the American hopelessly Occidental. In the old days this was a matter of but occasional interest, for each went his own way without much concern for the going of the other. Henceforth, however, it will be different. The East and the West will have to meet in the market place and do business with each other. Of necessity this must result in a compromise. It will not be like the old days of trade when the buyer had many sellers to pit one against the other. The American for some time to come, whatever his ability or the quality of his wares, will be the seller, and the buyer will not be in a position to be an exacting chooser. The West may think that the East is slow and lazy; the East may consider the West abrupt and impolite, but they will have to come to an understanding with each other; and to an appropriation of the foot that the terrainment has a sight to be preciation of the fact that every man has a right to his theory of life and his system of doing business and is not called upon to make any more alterations than he may find it necessary in order to expedite the matters he has in hand.

## Importance of Raw Material Importation

Real factors in foreign trade building are not merely exuberances of spirit over prospects of orders and en-thusiasm in filling them. Nor is sustained effort all that is required; these are truly important, but they are su-perficial; no deeper than the cuticle. The real basic fac-tors are more deeply embedded. They become the bone and sinew of the growth whose taproots extend into

But what are the real factors in trade building? Succinctly stated: raw materials, power, labor and capital. Purposely misquoting the rich young man of Biblical fame: "All these we have." Yes, we have them, and in abundance for the time being, but not inexhaustible, especially as to new materials and labor, two of the most important factors.

The first can be supplied and in unlimited quantities, not alone from our domains, but through importation from abroad. The necessity for raw materials in foreign trade

building over the other four factors mentioned is beyond all question paramount. This class of material is not only a prerequisite in the manufacture of articles for export, but the physical construction of the world is such that natural products to whatever kingdom (animal, veg-etable, or mineral) they belong, must in many cases be transported or their use be dispensed with by many ag-gregations of peoples. This, therefore, injects transporta-tion as a vital element into consideration, affording a medium through which return cargo is supplied.

#### Imports of Highest Importance

Imports, therefore, especially if they are of the raw material variety, are of the highest importance to the foreign trade of the United States. It is desirable to export our manufactured goods; and the more highly manufactured, the more desirable the export operation, but this is a secondary desideratum when compared with the first.

Eventually, however abundant, our raw materials (in many lines at least) will be depleted and must be replenished from elsewhere. Again, notwithstanding we have vast areas and diversified climates, there are some classes of raw materials indispensable to the export trade and to industries that must be obtained from abroad. It is of utmost import, therefore, that we get these from the sources of greatest supply, where, generally, they can be secured at the most favorable figures. In the getting of them, we can often give in exchange our highly manufactured commodities. In the operation, too, we furnish a return cargo for the transportation medium that conveys the export article to its destination, thereby serving a very important economic factor for reducing freight rates; for a voyage of x-miles plus a return equals 2x-miles, and if one-half of that distance is without cargo, there is an economic loss to some one.

While our exporters in 1915 were sending abroad merchandise to the value of nearly three billion dollars, overseas traders were equally as alert in bringing in some billion and a half dollars' worth of imports. Practically the same ratio has been maintained for several years, something like two to one in favor of exports, so far as

values are concerned.

#### Practice Highly Satisfactory

This practice should be considered highly satisfactory to American business men, since it retains the balance of trade largely in our favor and at the same time tends to equalize the outgoing and incoming tonnage. This is apparent from the fact that outgoing tonnage, consisting largely of manufactured articles, is less bulky and worth more than incoming cargoes of raw materials. So long as a nation can maintain such a division of its imports and exports as to value and character, conditioned as above, it can justly congratulate itself on its foreign trade.

But it has not been so long in the history of the foreign trade of the United States that these happy conditions prevailed here. Heretofore, we exported entirely too much

raw material and semi-manufactured goods.

The importer correctly divides the articles he handles into two broad classes—staples and specialties. The United States has likewise heretofore exported too much and imported too little of the first class. Staples are further subdivided into (1) Crude products, such as rubber, tin, lead, zinc, flax, dyes, etc.—products which, per se, cannot divert directly to the ultimate consumer, but must undergo further manufacture; (2) semi-staples such as the various

fabrics of linen, cotton, the plain silks, and like articles.

The trade of that country whose imports of the first class predominate over the second class, except in those articles where the climatic and other natural conditions render home production impracticable, is not to be considered highly satisfactory so far as the foreign transac-

tions are concerned.

#### Commodities From Elsewhere

But there are certain commodities we cannot at present produce, at least in sufficient quantities, and must have from elsewhere. They are: Crude rubber, tin, antimony, silk, coffee, tea, copra, many of the dyes; and others could be mentioned. There are many articles of which we have

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a minimum supply, but which might be produced at home in adequate quantities by the effective use of brains, labor and capital at a cost reasonable enough to discourage their importation in large quantities, such as rice, lead, zinc, flax, sugar, chemicals, and many of the fibers and crude metals. Yet, the importation of these latter are not unimportant in the sustentation of a large foreign trade.

The importance of import trade to this country is not measured alone, nor should it be measured thus, by profits accruing from the resale of foreign products brought here. The billions of dollars' worth of commodities that have been coming annually into the United States for the past ten years have furnished enormous additional profits in the nature of railroad earnings on traffic from the receiving port to the ultimate consumer, and of yearly balances of harbor, transportation and terminal companies. The profits of exchange dealers through whom financing of purchases have been negotiated have not been insignificant.

#### Other Sources of Profits

Referring to the other possible sources of profits not to be ignored, a certain prominent broker and attorney for one of the large importing houses of New York City said not long ago, and which is pertinent to what has preceded, that seven thousand employees are kept constantly at work administering tariff laws and collecting duties that are imposed through the Customs Department of the United States, as a result of the import trade. Quoting him verbatim, he further stated: "As a source of income to the federal government, as a source of supply for the thousands of industries that rely upon foreign products for part of their manufacturing processes, as a means of livelihood for the large body of importers, customs brokers, harbor and terminal organizations, and the handlers of incoming traffic, as well as for the men who take care of the international financial operations that these imports entail, this half of our foreign commerce deserves thorough study and careful attention.

Perhaps of greatest importance, however, is the possible opportunity of importing the raw materials for manufacture and eventually exportation. This suggests the "free port" idea, a subject in itself, of no inconsequential magnitude. However, by operating under the present existing laws, and by means of drawbacks, the same results can be accomplished through importing the raw material, manufacturing under stipulated regulations, and exporting the finished product, thus encouraging and succoring direct steamship lines between two given ports, by supplying them with cargo each way. Other benefits accruing would be the employment of labor in the manufacture of these products and preserving some of the rapidly vanishing supplies of certain raw material needed in home consumption.

## Advertising and Salesmanship

No two authorities are exactly of the same mind as to the uniquely proper way to advertise effectively for foreign sales. All are agreed that personal representation has first place among numerous methods of foreign trade propaganda.

Looking at the hydra-headed subject from the broad view point of the business man who lays out his foreign trade policy for a future development on a large scale and with the intention that it grow gradually year by year for a quarter of a century—and this truly is the proper fashion to lay out an export policy—there is argument favoring all, not by any means unequal in their importance. In other words, there is no preponderance of argument in favor of one to the exclusion of the other. That the many combined, in the majority of cases would obtain better results, is not sufficient argument against a just balancing of their comparative merits. Measured from the point of view of aggregate orders obtained by the export concerns of the United States, those secured through sources, other than personal representation abroad, unquestionably exceed in volume.

#### Publicity Important

That it is all important to attract the attention of the prospective customer is too obvious to admit of serious discussion. This is accomplished by means of publicity. and there are fewer fishes of all kinds and species spread out over the seven seas than there are varieties of publicity. How exasperatingly general the above proposition! Yet specifically stated, it is equally true. For the epitome of publicity—the export trade journal—were it a sentient creature, could not do less than admit the relative importance of other mediums, such as house organs, daily papers, technical periodicals, secular publications, home literature, and numerous others, to say nothing of catalogues, posters, hand bills, stamps, sticking designs and devices, letterheads and little novelties, moving pictures, and other illustrations allusively arranged to attract ocularly the at-These are a few of the many mediums of pubtention. licity. Advertising is one of its species and is as essential to foreign trade development as the raw materials are to the manufacturer of articles for that trade.

It must not be inferred, however, that the personal element is not of paramount importance as a factor, for if exporters of the United States are to succeed as competitors with European and Japanese merchants abroad, the personal element must be extended in their dealings with foreign markets the world around. It is not only the surest means of trade development, but its great superiority over every other means is unquestioned by those who know foreign trade in all its ramifications. Nevertheless it is a physical impossibility for the factory salesman, or the representative of the export commission house, or merchant to visit every possible foreign market, nor can he even visit all the most important markets that should be exploited.

Again, even if the salesman is employed there still remains and always will remain, the absolute necessity for advertising as an adjunct in foreign countries.

Of the three "words" in foreign trade promotionwritten or correspondence, printed or advertising, spoken or salesmanship or salesmanship abroad—the later should be classed first as a fructifier of results. While the variety of publicity is indisputably important to arrest attention, and the personal representation is a major requisite to trade getting, still advertising when appropriately arranged and judiciously distributed is essential to edu-cate the public for a definite purpose. Besides being one of the modes of publicity, it is an able adjunct to all other modes that cannot be omitted without affecting adversely final results. While only a form of publicity, it consists of many kinds. There is advertising with a first object of increasing foreign connections, of establishing agencies, dealers and distributors, and even reaching to the ultimate consumer. Then, too, there is advertising designed primarily to attract attention purely along the lines of general publicity. Of local advertising in foreign markets to effectively increase local trade of agents, dealers and distributors whole volumes could be written, although this sort of advertising is more desirable in stimulating sales of small wares, novelties, etc., than otherwise. It should not be supposed, as not infrequently it is by the inexperienced in foreign trade, that the newspaper. trade journal and magazine announcements constitute foreign advertising in toto. On the contrary, this manner of advising the foreign public of your wants and stimulating a desire for mutual co-operation, comprehends all propaganda work, such as catalogues, booklets, leaflets used as envelope stuffers, and as one writer well known in foreign trade circles says: "A service department, including dealer's helps and hints and assistance to operators in general the maintaining of a genuine enthusiasm on the part of buyers and users.

#### Salesmen's Success

Success of the salesman abroad is dependent, not so much upon his knowledge of the language and customs of the countries he exploits, though these are not by any manner of means inconsequential, but rather upon a thorough, a painstaking knowledge of the goods he represents. How they are manufactured, how they are classed,

how they are packed and priced for foreign markets are essential features of which he should have an expert know-ledge. Secondarily, but of little less importance for his complete success, is a hearty co-operation and intimate relationship with the export manager of the house he represents. And here is where the advertising manager shines forth to the best advantage should the house he represents have for its object the conquest of foreign mar-kets. That the advertising manager should heartily cooperate with the export manager in the development of business through correspondence, and in the loyal support of his salesman abroad goes without saying. Besides being a good salesman in the art of selling, as exemplified by his personally meeting the customers, the salesman should unquestionably know how to effectively talk on paper. In this connection the advertising manager is of incalculable value to the representative abroad if he is able easily to develop propaganda work through correspondence.

A feeling of mutual interest between the manufacturer and his foreign customer must be engendered some way, for men of whatever nationality, all else being equal, prefer to buy from people they know and continue with them for long periods. And while no manufacturer or exporter, however many representatives he maintains abroad, can be acquainted with all of his trade personally, he may, nevertheless, approximate such a personal acquaintance through mediums of correspondence and advertising, whether in promotion of foreign trade, or in protecting it after once having been secured.

One authority has summarized the subject, though stac-

cato, yet how wisely you may be your own judge. He said: "Know your customers in person whenever you can. When you cannot, know them on paper. Salesmanship on paper is the greatest single element in any export trade promotion. Enthusiasm on the part of your customers can be created only by the enthusiasm that you take pains to instill. A thorough study of the foreign problems is the only road that will lead to a successful foreign trade."

The various phases incident to securing orders abroad have thus been generalized, then summarized, and it now

remains to amplify.

#### Determining a Policy

A merchant, we will say, decides to enter a foreign field. He first determines his policy, including various lines of goods, countries to be exploited, sums to be appropriated to propaganda work, etc. He himself, or some member of the concern, then visits the proposed field of operation abroad. While on the ground he may establish agencies, or form connections. Most likely he will return without having done either. Up to now he has not taken an order or attempted to do so. Likely his next step will be to select his best salesman and properly equip him for the field, or fields selected.

Arrived on the field of action this salesman, whom we will suppose is in full rapport with the advertising manager and export manager of the house, will proceed to cover the market with the view of securing orders. He will be the judge of the amount of advertising, the character of same, and whether it will be directed to the benefit of the local agent or distributor, or to the ultimate consumer. The determination of those points will indicate to a large extent the medium through which a house will be advised to advertise, and the character of the publication selected, as well as the probable amount of advertising necessary to properly sell the goods to a maximum sum. This might, by a good judge of the market exploited, be considered beneficial.

#### Foreign Import Relations

Agitation in the minds of business men is by no means limited regarding foreign import restrictions which have been promulgated by various foreign countries, and the indications are that in the same proportion as these restrictions increase in number, so will increase the serious con-cern on the part of business men. That it is going to require patience and the lapse of considerable time before commerce swings back to normal has recently begun to dawn upon the minds of those who have been in a position to size up the situation in its broader aspects. Congress will, unquestionably, have to take cognizance of the accumulating demands on exporters and the various governmental functionaries must eventually take a hand in the interests of American manufacturers and exporters by counter restrictions; otherwise the outlook for American business men abroad is by no means roseate. The United States Department of Commerce has already sensed the increasing need of some remedial regulations and in this connection business men have been advised of the restrictions put into effect to date by the leading European countries. The action is probably more to put them on guard in their future transactions than to offer any specific remedy.

As far back as the spring of last year the British Board of Trade Journal announced that British prohibition on imports were not intended to be absolute, but to furnish an opportunity for the limitation or control of shipment and distribution of goods according to the best interests of that country. The authorities gave at that time as reasons: the shortage of tonnage, the necessity of giving priority to shipments of foods, the enforcing of economy in expenditures for luxuries, and the importance of expedition diting manufacturing for war purposes which had to be taken into consideration in establishing this control and subsequently disclaimed any intention of an absolute exclusion, embodied in a statement that the imports of goods under license might even show an increase over normal imports when the goods were of an essential character. This was strictly a war measure and perfectly jutifiable at that time. But how does this line of reasoning square with what follows of recent date?

### British Withdrawal of Prohibition

As late as January 28th of the present year, there was announced by the Journal of the British Board of Trade the withdrawal, effective on March 1, 1919, of certain import prohibitions. Prior to that time there had been published a list of manufactured articles beginning with "aluminum powder" and extending through the entire alphabet down to and including "weights and measures," which included not only a large number of specified commodities, but comprehended many more which were included in general terms. However, the order was abrogated and in the abrogation of this date at which general license would be permitted, thus placing the articles referred to upon a strict import prohibition, a rule was promulgated extending the general license to a number of raw materials, such as fruits, nuts, oils and gum-producing commodities, skins and hides, sugar cane, timber dunnage used as temporary ship-fittings, unmanufactured and manufactured tobacco, wood-flour, etc.

In contrast to this, however, the Ministerial decree of January 20th, published by the French Government partially removes French import prohibitions. The list is long and comprehends a number of commodities. The most important classes of articles, however, for which import licenses are still required, include textile material and manufactures thereof, paper and paper manufactures other than newspaper and periodical publications, boots and shoes, metals, metal manufactures and machinery (with certain exceptions) furniture, vehicles, and small wares and instruments. With these restrictions set forth in detail under the above-mentioned decree, a statement follows that the control of many other classes of articles has been relaxed and exporters should assure themselves that goods are no longer on the prohibited list before making ship-

ment without French import licenses.

In Belgium a royal decree, dated November 18, 1918, published in The Moniteur Belge, provides that the export of goods of all kinds by land or sea would be effected only by licenses issued by or under the authority of the Minister of Economic Affairs. The decree was "water-tight" and so thoroughly to the point as to provide for the institution of a committee on exportation and importation which would be fully empowered as to the general condition to which the issuance of the license should be subject, as well as to the class of goods which would be affected.

#### Regulations Brought Up to Date

These regulations were brought up to date in a publication of January 9th to the effect that licenses for the im-



portation of food stuffs, clothing, textiles, and tobacco were to be issued by the Minister of Industry, Labor and Revictualing. Licenses for the importation of all other commodities to be issued by the Minister of Economic Affairs, with further provision that when the consignees were Belgians, application for import license would only be received after a favorable recommendation of the Chambers of Commerce of their respective districts. Other consignees should make their applications for import licenses to their respective Legations at Brussels, to be in turn presented to the competent Belgian Ministry. This government, however, stated that import licenses were no longer required for certain kinds of foodstuffs, condiments, and soap.

Canadian restrictions on imports of date the latter part of last year were by Order in Council to replace the list of import restrictions issued June 13, 1918. It may be stated, however, that in the number of import prohibitions Canadian authorities have acted in co-operation with the United States War Trade Board and the list of prohibited imports into Canada is quite similar to that in force in this country. The regulations governing these import restrictions are comprehended in three groups.

#### Articles Only Under License

The first group comprises articles which may be imported from all foreign countries only under license and covers a large number of commodities; while the second group comprises articles for which no special authority is required, from the United States, Newfoundland, and St. Pierre, Miquelon, but which are subject to license from other countries. This group included enumerated articles from "acids" down to and including "zinc," and takes into consideration the great bulk of those commodities which the United States has for export, and in addition a large number of raw materials from tropical countries. Under the third group are included certain restricted imports, which, under the rule of the Canadian War Trade Board, may be admitted into Canada without license when imported from British and allied countries. These articles are very few in number and apply principally to blue prints and building plans, photographs, drawings, pictures, illustrations, prints, engravings sent without charge to Canadian importers, and articles admitted temporarily by the Canadian Customs, conditional on re-exportation, such as articles for exhibition purposes, tourists' outfits, etc. It is noted, however, that there is no prohibition against such articles as acorn nuts, cocoanuts, bananas, green apples, citrus fruits generally, shaddocks, beans and other pulse foods, canned vegetables generally, and certain of the tubers. Sunday school lesson pictures, as well as Bible illustrations and photographs, where the number does not exceed three, sent by friends and not for the purpose of sale, are admitted.

The tardiness with which restrictions on exports from the United States have been removed has been a source of no little concern on the part of exporters here. But in view of the continued import restrictions in European countries there are just grounds for pessimism and demand for remedial measures. It was in European countries that the American had built his highest hopes of finding the principal markets for his manufactured goods after the war. Instead, however, he finds a wall of restriction in the form of extensions as to time for the lapse of limitation and enlargement as to the number of articles affected. In the Wattersonian style it is not so germane to the question: "Where are we at?" but rather, whereunto are we headed?

## A Few Hints to Beginners in the Export Trade

NOTE—The following article is confined to hints to beginners and should not be confused with the series of articles constituting the first part of this department. It is confined, as its title implies, to hints to beginners, whereas the series referred to deals with the more important phases of the business in a much more complete and comprehensive manner.

America is not in the true sense of the word a great exporting nation. Undoubtedly many readers will ridicule the idea and point to the gigantic customs returns in refutation. Nevertheless, the fact remains that at pres-

ent we are not a great exporting nation. Undoubtedly, we have a few merchant princes among us who have done big things on a big scale and who can rank with the leading firms of England and Germany, but the vast majority of our exporters and importers are hardly out of their swaddling clothes. The reason is not far to seek. Here at home we had a vast domestic trade, and with a few notable exceptions, we had all we could handle successfully and foreign trade was with us very greatly a side line.

#### Our Position to Other Countries

With Germany and England the case was very different: their colonization schemes alone brought them a wealth of trade; their flags were carried over all the seas of the universe; their vast shipping accommodations sufficed to carry their goods everywhere, they sent their pioneers to every part of the globe, they spent vast sums of money in opening up unknown countries, they developed the resources of these countries and to a greater or less extent educated the natives toward civilized requirements. They sent missionaries and emissaries who dwelt among the peoples of the far-distant lands who learned their customs, their mannerisms, habits and requirements. profited by these methods, and generation after generation saw enormous advances made in their commercial activities throughout the world. They catered for foreign trade in the fullest sense of the word and particularly in the case of Germany made it the first object, domestic trade being with this country a secondary consideration. It was a compulsory measure for their very existence as great nations.

We fortunately, or unfortunately, as the case may be, and our future operations can alone show which is the correct method of looking at the question, were not placed in their position. We were self-contained and could produce and consume practically all our manufactured products and required only to seek a few of the raw materials of foreign lands. There were, of course, many notable exceptions; but, speaking broadly, we were a "home nation."

Spasmodically, and in a more or less haphazard way we did export, but we usually did this when home trade was bad, and then we sought foreign markets in a perfunctory way as a dumping ground for our over-production. In some cases we were successful, but when trade again picked up at home our interests in foreign countries greatly relaxed, in many cases orders were not filled and often no consideration whatever was given to repeats, so much so that frequently no acknowledgment whatever was sent or explanation given why foreign orders were not executed. Such methods could not result in or hope for any permanence of export trade, and very naturally many who would have been good customers were inclined to look askance at us while many more who could have been induced to be good customers and who were carefully watching us were never persuaded to even give us a trial order.

That this should be the case was only natural since our great competitors were always on the alert and could readily point out how far superior was their service, even assuming the quality of the goods to be the same. Service always counts.

#### Programmes Carried Out Thoroughly

We must not forget that other countries when entering the foreign fields carried out their programmes very thoroughly. One of their first and most effective methods was to establish reliable banking connections, either by branches of powerful institutions at home or by interesting the natives of the various countries and financially supporting local institutions. In many cases they secured concessions for railways, mining, plantations and manufacturing, and thus while investing large sums reaped the benefits of the trade resulting therefrom. They ran regular mail services to all these distant lands and encouraged trade in every possible way.

As against all this, where do we come in as an exporter? Until recently we have not had a fleet worth the name, we have done practically no pioneering work, we have invested but little in foreign industries, we have secured

practically no concessions, in fact we have not "thrown the spar to catch the mackerel." Therefore as an exporting country in the real meaning of the word we are of very small caliber.

True, on paper we have through the medium of the world's conflict become the greatest exporting nation in the world, but it is only on paper. We count the profits, they are gigantic, but they are not earned by the sweat of our brows as has been the case with our competitors. They have literally been forced upon us, we did not seek them. Now we have tasted blood and we have gone crazy to get into the exporting game. That is the whole situation. We want to get in. Paradoxical as it may seem, while our figures clearly prove that we are the greatest exporters in the world, yet we are not yet a great exporting na-

Since the war commenced tens of thousands of export houses have sprung up, with practically no knowledge, or at best, only a very limited knowledge of foreign requirements. They saw vast possibilities ahead and figured on the success achieved by the small number of old established concerns. They thought they would be equally successful. Some entered the field without knowledge or capital. Their end was inevitable and they were not widely mourned. Some few made partial successes and very few succeeded as they anticipated. An estimate was published recently, showing that of all the new export companies starting during the past four years less than 5 per cent are still in existence. The fact is patent that they "rushed in where angels fear to tread."

To establish a successful export business, the very first essential is patience. To expect immediate results is imbecile and unless one is willing to plan a thorough campaign of preparation down to the most minute details he had better test his patience in other lines. There is no harvest ever reaped without a seeding time beforehand.

#### Commencing to Realize Possibilities

Apparently now we are commencing to realize the situa-tion and the vast possibilities opened up to us, but we have very much to learn before we can rank as leaders in the foreign trade. Realizing the vast possibilities of the business the Government is establishing classes of instruction conducted by competent and practical men which are being very largely attended by earnest students. This is undoubtedly a move in the right direction and is but tardily following out methods adopted by Germany generations ago. This is preparatory work of a practical nature which portends for future success. Another great factor in our favor is the enormous fleet, our heritage of war, while originally constructed for emergency reasons, now bids fair to place us in the front rank of owners and car-riers, and will render us independent of foreign tonnage. This once dark blot upon our escutcheon in the days of yore has at last been wiped away. Another matter of vital importance toward the proper conduct of foreign trade is the establishment of proper banking facilities in the countries we desire to trade with. Until recently our own banks with branches in foreign countries were almost nonexistent and we were almost entirely dependent upon foreign institutions. This made business difficult, expensive and tardy of accomplishment. However, some of our progressive institutions have sized up the situation and have already thrown out their lines for direct trade, either through the establishment of branches or by forming subsidiary institutions. In this important matter we have very much yet to learn, especially from England, who, by re-cent amalgamation has now formed some half-dozen of the strongest institutions in the world, prepared to handle business of any conceivable magnitude in every part of the world where business is to be done. In this respect she is prepared to adopt most aggressive methods, and our own bankers might undoubtedly profit from the study. Germany is also reported to be acting on similar lines, but her troubles are so great and her resources so crippled that she is unlikely to become a very dominant or prominent factor in the world's foreign trade for a considerable period of time, and we can largely account for the foreign trade she once handled. Moreover, at the moment of writing, her ultimate fate is largely a matter of con-

jecture, and no definite opinion as to her future can be formed until the Peace Conference has decided exactly how to deal with her. In certain places abroad our own banking facilities were handled by merchant firms, themselves in the import and export business. This naturally, while greatly to their own advantage, was directly against the interest of the merchants operating on similar lines in the same territory who did not touch banking. The recent rapid turn in the wheel of life may probably be the death knell of private banking concerns and the establishment of international institutions.

#### Amalgamation and Consolidation

In the same way the enormous expansion of trade throughout the entire universe makes for amalgamation and consolidation of all kinds. Very much of the future trade will be of such a gigantic nature as to preclude individual dealing, and it is for that very reason-foreseeing the difficulties that must arise—that France has formed pur-chasing associations to deal with combinations capable of handling the business on a sufficiently comprehensive scale. So will this call for extraordinary banking facilities, for these as previously constituted, would be entirely incapable of dealing with projects of such magnitude. This was one of the many reasons which induced farseeing British financiers to adopt the huge amalgamation schemes referred to. At a recent banquet in New York Mayor Florello H. la Guardia said:

"There can be no stable trade until we Americans see

the need of local banks in every land we trade in.

Credits must be handled according to the laws and customs of each land. Long credit must be provided for. At the convention, recently held in New York, of the American Export Association, John F. Fowler, vice-president of W. R. Grace & Co., describing the export merchant,

says:
"Now, not only in this country, but also in other country, but also in other country, for the country capacities, for he may either:

(a) Purchase outright, for his own account.

b) Purchase on commission, for his principals abroad. (c) Serve in special lines, under factory arrangements, without extra charge to a customer abroad; or

(d) In his duties of general service, he may operate in whichever form, according to particular circumstances

This is an excellent definition and worthy of the consideration of all beginners who are not versed in the true functions of the exporter but who are apt to look upon the export field as a get-rich-quick paradise.

## Fundamental Starting Point

Having these premises as a fundamental starting point. it rests with the operator to decide on his future plan of campaign and select one or more of the above methods as his modus operandi. His next move naturally is to select the market which appeals to him most or for which he considers he is most adapted. The amount of capital he is prepared to invest must be a great influence in the selection also, as some countries operate almost entirely on a cash basis, while in others long credits are practically indispensable.

A knowledge of the language of the selected country. while in some cases not absolutely essential, is always a very valuable asset. This is particularly the case in Russia and Latin-America. It was largely through this study of languages that Germany got so far ahead of most of her competitors. Nearly all her travelers, who practically served an apprenticeship before embarking on foreign trade in foreign countries, could speak three or four languages besides their native tongue, and frequently also the dialect of various tribes in the different countries they traded with.

Then, there are some would-be exporters who, with but the veriest smattering of foreign trade, think all they have to do is to open an office, advertise in foreign publications, hire a stenographer or two, mail out thousands of circulars and await results; possibly they are working other lines as a means of livelihood, and putting any surplus into their export business. For such—and there are many of them—failure complete and utter must be the result.

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Export business cannot be treated as a side line. It would be easier for a grade school boy to pass a university examination than to make a success of foreign trade under such conditions. It requires the most careful and minute study from every angle.

#### Often Pay Premiums to Learn

In England often very large premiums were paid by parents to place their sons in the offices of export merchants, where they received several years' thorough grounding in the work before they were considered in any way fit for positions carrying the slightest responsibility. They practically graduated and then were sent abroad to establish branches or to open up fresh connections in newer fields. These men seldom failed to make good. They had the training necessary and they entered whole-heartedly into the business which they meant to be their life work. They were specialists in their own particular line.

The would-be American exporter (and this article is meant for such, and in no way reflects upon our many fine old established merchants), must from the outset very clearly understand that he will only attain success by sheer hard work and application to his subject. It is not going to be a bed of roses or a summer day's picnic, and if he has any such idea in his head he had far better select

some other walk in life before it is too late.

A very practical plan, probably the best for a young man to follow, assuming that this article will be read by young men, young at any rate in the export game, is after having selected his market and made a study of the language of the country, to make a personal visit and to carry with him samples of the goods which he wishes to introduce. Before doing this he will naturally enter into arrangements with one or more manufacturers to represent them, and he must be assured that the firms are in a position to execute the orders he secures. Therefore it will be ncessary to deal with firms of sufficient magnitude and standing, and if they are willing to put up part of the expense incurred, he will then have some tangible guarantee that they wish to cultivate the export business. Dollars talk every time.

At the present moment there are thousands of our manufacturers only too anxious to get into the foreign markets, but, who having previously only done a domestic trade have not the slightest idea how to go about it. A union of the salesmen now entering the export field and the manufacturer should be a happy and prosperous one.

#### Make Initial Trip

A selling connection thus established it remains for the exporter to make his initial trip. Arrived at his destination he does not require to unpack his samples at sunrise the day before he gets there. If he is fortunate enough to have letters of introduction it is as well to present them at once and spend a few days sizing up the situation, listening to everything pertaining to the habits and customs of the country and, above all, adapting himself to circumstances.

He must not attempt to dominate the situation and, above all, he must not try to tell foreigners how much better they do things in America. Any superfluous gas he has should be let off before arrival or in the company of

his own countrymen.

He will find a little flattery not wasted—he is vain himself of his country—so why not let the other fellow have a little natural vanity for his own home land? To carry it to extremes would be like spreading butter with a trowel, but when judiciously applied he would make friends far sooner than by assuming an aggressive air of "swank." He has come to sell his goods and must adopt the methods best calculated to yield the desired results. By adopting this course he secures the good will of the desired customer, and from hints received he will naturally ascertain the most approved methods of approaching his prospect upon business, whether it be before breakfast or after dinner, whether in the office, the store, or the club, and if wise in his generation he will abide by the customs of the country and not try and force his ideas and hours. If he does, but little business will result. He may get one order—a small one to get rid of him—but never any repeats. His time has been utterly wasted. But

by adapting himself to his customer's methods—no matter if they appear irksome and obsolete—he will probably make a lasting friend, transact a great volume of business and assuredly get much valuable information and introductions which will stand him in good stead farther afield

Another thing he must be exceedingly careful of, and in this he can take a leaf out of the German's book, is not to try and force the goods he has to sell. It may be that he has persuasive selling ability and can talk a customer into buying what will remain on his shelves till eternity. Therein he makes a big mistake. By all means let him show his goods; they may make a hit and then again they may be totally unsuitable for one of many reasons for this particular market. The customer will soon say what his requirements are and the suggestions thrown out should be promptly taken hold of by the aspirant for orders who will book according to specifications. Should the goods turn out right the nucleus for a long and profitable business has been formed, the thin end of the wedge has been got in and the exporter is on the high road to success. Once having established a name as a reliable and careful correspondent it will not take long for your reputation to spread. Periodical visits from a member of the firm are always advisable to cement connections and to keep up-to-date on all matters pertaining to the country. This, coupled with a continuous advertisement in one or two leading trade journals circulating in the territory covered, will have the effect of keeping your name before old clients and new prospects. Be sure and make a good display of your cable address. If you have not one already go to the nearest office and register one immediately. Then select and advertise the code you inimmediately. Then select and advertise the code you intend to use. These may appear trivial details but they are important ones and often bring unexpected orders.

#### Working in Single Harness

All along it is assumed that the new exporter is working absolutely in single harness and has formed selling connections before leaving the United States. Of course, it may be that a partnership or organization is formed which would handle the orders as sent, and in that case they might act as merchants, or in one of the other capacities suggested by Mr. Fowler, when the ideas laid down here might be varied or modified to meet the case.

But reverting to the idea that the exporter is working off his own hat and is ab initio his own traveler, if he follows out the plans outlined he will soon find himself the owner of a really good business, his few months' trip will have been the greatest education possible for him and he will return to his office in New York, Seattle or wherever it may be, with every hope of a prosperous

future in export trade.

Always be sure to pay most careful attention to all instructions given as to packing, containers and methods of transportation; follow these out to the letter. Your customer has specific reasons for giving these minute details which may not be known to you in a hurried visit. Finally, execute all orders as promptly as possible, if for any unforeseen reason there should be any delay in shipment, write and advise the reason. Or if the order is "season's goods," it might be a wise policy to cable, as no merchant wants to carry goods over from one year to another, and although the profit on that individual transaction may be lost, the fact that you are attending to your client's interests still further ingratiates you in his favor and you can look upon the business of the future as yours almost by divine right. Last, but not least, always answer all correspondence minutely, accurately and courteously. These small attentions to details pay handsomely.

## Importance of Specializing

When entering the foreign trade field the first essential is an absolutely open mind and a fixed determination not only to study the methods that have been the means of bringing success to our competitors, but to improve on them. This can only be done by giving intelligent and continual application to the subject. Success in foreign trade will come only to those prepared to work and work hard as is the case in any other walk in life.

The first step to success is organization, the second, development, and withal patience. A firm confining itself to foreign trade may act in several ways. It may import only, export only, or combine the two operations. An export department may be added to a domestic business or may be tacked on to a manufacturing concern and act practically as a safety valve. In the latter cases frequently importing is not included, although there are exceptions where large manufacturers decide to import the raw materials necessary for their trade.

Specializing in Goods and Territory

Unless possessed of great capital, which is seldom the case with beginners, specialize in some particular territory and also in certain lines of goods. Learn to know the countries you deal with thoroughly and your goods from Alpha to Omega. A traveller who can intelligently discuss the commodity he is offering for sale and can trace it back through all the processes of manufacture to its source of origin of raw material will so interest his customer that he will in nine cases out of ten carry away the order, even against champion salesmen who have only sales talk rolling off their tongues, and who are more or less mechanical. Brains and intelligence will nearly always carry the day. This is not written in any way derogatory to high-class American salesmanship but with the idea of impressing upon salesmen the extreme value of studying their goods as well as their methods of selling. The dual combina-tion cannot fail to bring the best results.

Another method well worthy of putting into practice is to carefully follow up trade opportunities which are published in several of the leading magazines. Always remember that these inquiries are received from and published in the interests of genuine traders. Do not think they are for idle curiosity, and do not send, as some firms have been known to do, for a complete list of all inquiries. It is obvious that this only entails needless trouble and waste of time for all concerned. No one firm can deal or attempt to deal with every inquiry published. In fact to write practically blindly is like the greedy boy who took all the cake and while he could not eat it all, left lots of others hungry. Rest assured that such a procedure stamps you as a nondesirable or a busybody who wants to know what everybody else is doing. Such methods accomplish nothing and do not secure the best attention of the service department of the magazines which publish the inquiries.

Intelligent Replies Essential

The best advice is to carefully select just those in-quiries which commend themselves to you most and which require assistance in those articles you specialize or propose to specialize in. Frequently a hundred or more inquiries are received in reply to a single query run. Assume for a moment that each of the hundred communicated with the advertiser. It is only natural that he would select at most, but two or three, and those he did select would be from those whose replies dealt intelligently with the proposition. Therefore, it is necesarry to lay emphasis on the advice, even at the risk of repetition, to know your subject thoroughly; select the markets and goods you desire to specialize in and don't on any account go outside your prescribed limit or beyond your financial depth. By rigidly adhering to these methods success will come to you. It may at first be slow but it will be sure, for you will have founded your structure on a solid rock and not on shifting sand. Your business will stick and grow. One satisfied customer often leads to a second, a second to a third, until it almost reaches the endless chain plan.

If you had a bad tooth you would naturally look for a dentist to extract it; you would not think of going to a coal heaver, Similarly a customer, say in Chile, who wished to import boots and shoes would get better results from a firm specializing in those commodities, which knew its trade from experience and study, than from a jack-of-all trades. True, the latter might supply you with boots, just the same as the coal heaver might hew your tooth out, but the results would in both cases be distinctly unsatisfactory and displeasing and certainly not be conducive to permanent business relationship.

#### Thoroughly Understand Your Product

In almost all businesses we find specialists who confine their efforts within certain prescribed lines. By concentrating all their energies they become past masters in the lines they handle. Their reputation grows apace because they thoroughly know exactly what is required even down to the most minute details. Outside their own particular sphere they may not be worth their salt, but by continued application and careful observation they have reached the highest standard in their own trade and achieved the success they deserve and have earned by specializing. Undoubtedly this theory holds good in foreign trade. Never attempt to handle anything you don't thoroughly understand. Success never comes that way. Specialize in a few articles and learn them ab initio. By degrees and by constant application another line or two may be added to your list but don't attempt to trade in them until you are in position to both buy and sell to advantage. To be a good buyer is equally as important as to be an efficient salesman and both departments are equally essential in foreign trade.

#### How Requirements Differ

Let us assume your business is in farm implements. You naturally wish to know which field offers the best opportunities. You may have visions of capturing trade in all parts of the world with the same machine. This idea is absolutely wrong. Take, for machine. This idea is absolutely wrong. Take, for instance, Australia where the farms are large, where the farmers are advanced in their ideas, where the Government will assist needy farmers through agricultural banks to finance their machinery bills when required, and where many others in good positions are anxious and willing to spend freely for the most up-to-date machinery, you are practically dealing with a progressive nation which is prepared to pay cash for their goods.

Australia is a vast country which readily appeals to you. But you must have exactly the goods wanted. for while a potential buyer, the Australian farmer is inclined to be conservative and any innovations as regards machinery require to be thoroughly demonstrated in a practical way before he catches on. Compare this market with that offered by some of the smaller Latin-American republics. Here the more slowgoing southern races require not only a different class of machine but usually do their business on long credits. Their farm holdings are much smaller and their purchasing power is not so great. The field, however, is a vast one and the opportunities offered are very great. Profits probably may even be greater but the cash is longer coming in, for in most countries of the countri tries they have not the same financial facilities offered as are provided by the agricultural banking methods of Australia.

#### Best to Concentrate on Certain Field

This illustration is given to show the very varied conditions pertaining to one trade. The goods that will suit one market are not applicable to another. The plan of campaign is different and the conditions under which business is done are different. It may be that you are in a position to supply the requirements of both countries, but it is more than likely that it will pay you far better to specialize and make yourself master of certain defined territory on which you can concentrate and which may profitably employ your undivided attention.

Undoubtedly there may be new firms embarking on the import and export seas which are so constituted as to successfully handle many commodities and to go into the business capably on general lines, but in such cases they must be prepared with sufficient capital to add branches under thoroughly qualified department managers, each fully equipped and up-to-date as regards the goods in which he specializes and with an accurate idea of the territory in which he will operate. Anything

short of this spells disaster.

# Ports of the Pacific

## **ACAJUTLA**

Position: Latitude 13 degrees 39 minutes north, longitude 89 degrees 54 minutes west. The port of Sonsonate.

Population: About 1,500.
Imports: Cotton and silk goods, yarn, hardware, flour,

drugs, etc.

Exports: Coffee, balsam, hides, deer skins, sugar and

indigo.

Accommodation: Acajutla is an open bay about 62 miles southeast of San Jose; it is sheltered from the southeast by the Remedois Reef, a dangerous and extensive shoal, extending from a point of the same name. The salt water here is very injurious to cables and copper. Ships anchor in 9 to 11 fathoms, Landing is difficult, and ought to be effected in a good whaleboat. Merchant vessels load and discharge their cargoes by means of launches, or large craft in the shape of whaleboats. A substantially built pier, fitted with cranes, facilitates the landing although at times the surf renders it hazardous. By giving two days' notice, fresh provisions may be obtained in large quantities from Sonsonate. The old roadstead known as Puerto Viego (about ½ mile west) is the one now mostly used by shipping; there is an iron pier about 234 metres in length, and the railway to the interior starts from here. It is claimed that better bottom anchorage is found in this place, with the same depth. Ballast is thrown

overboard a little outside the anchorage.

Port Charges: The only port charge is 15c per ton, payable in one port only. Labor: \$2.00 per day. Custom House, business charges, \$16.00. Sailing License and Muster Roll, \$4.00. The total expenses of a vessel of 304 tons reg., loading three-fourths of her cargo at Acajutla and the remainder at La Libertad, amounted to about

\$80.00.

## **ACAPULCO**

Position: Latitude 16 degrees 51 minutes north, longitude 99 degrees 56 minutes west.

Population: 5,000.

Pilotage: Compulsory. Pilotage charges: 12 pesos per meter in summer (from April 16-October 14), 15 pesos per meter in winter (from October 15-April 15), also 50 per cent extra if ship enters or sails at night, also 25 pesos for pilot if ship enters or sails at night. For opening register, 8 pesos for foreign cargo, 2 pesos local; for clearance with cargo, 4 pesos; for clearance at night, Sundays or holidays, the ship has to pay salaries to such employees in the custom house and Capitania de Puerto as have to be on duty at time of such work; permits can be had from 6 to 12 and they collect six hours' work, and from 6 to 6 they collect twelve hours' work. All payments to be made in Mexican gold or its equivalent.



One of the Principal Streets

Port Charges: Tonnage or wharf dues, .06 Mexican per ton at first Mexican port. Sanitary, .02 per ton at first Mexican port, .01 per ton subsequent ports.

Stevedoring: Rates for loading and discharging cargo, .25 Mexican per 150 lbs. Overtime cost per hour, double the above. Lighterage, 2.00 Mexican per ton, 50 per cent overtime. Lighterage, cost per lighter per day, 20.00.

Accommodation: No dock or wharf accommodations. For anchorage, see U. S. Hydrographic charts and sailing instructions. One of the best harbors belonging to Mexico on Pacific Coast.

Imports: Cotton, silks, wools, crockery, general mer-

chandise, wines, liquors, hardware, drugs.

chandise, wines, liquors, hardware, drugs.

Exports: Hides and skins, limes, sesame seed cake.

Names of Importing and Exporting Firms: Hudson,
Billings y Cia, P. Urnuella y Cia, Sucrs., Alzuyeta y Cia,
Sucrs., Aristeo Lobato, all general; Link Sucrs., drugs;
Garcia, Luis, drugs.

Steamer Lines Using the Port: Fair & Moran, San
Francisco; Pacific Mail S. S. Company, both running to
San Francisco and the former stopping at San Pedro, Cal.

Consular Representation: Norway, Vice-Consul W. H.

Hudson

## **AKAROA** New Zealand

Position: Latitude 43 degrees 51 minutes south, longitude 172 degrees 56 minutes east.

Population: 1,000.
Landlocked harbor, anchorage in 3 fathoms at low water. Christchurch is about 55 miles southeast of here.

## **ALBANY** Western Australia

Position: Latitude 35 minutes south, longitude 117 degrees 45 minutes east. Population: 3,211.

Population: 3,211.
Pilotage: Compulsory, for overseas vessels. From sea into King George's Sound, 10 feet and under, £2; 10 to 11 feet, £2 4s; 11 to 12 feet, £2 8s; 12 to 13 feet, £2 15s; 5/- extra per foot to 21 feet; 21 feet and upwards, £5; same rates outwards. Into Princess Royal Harbor, including navigation of Sound, under 8 feet, £2; 8 to 9 feet, £2 5s; 5/- extra per foot to 19 feet; 19 to 20 feet, £5 12s; 20 to 21 feet, £5 18s; 21 feet and upwards, £5 18s; same for outwards.

Port charges: Tonnage dues, 3d. per ton for loading and discharging. Light dues, inwards, 2d. reg. ton; outwards. 2d.

wards, 2d.

Accommodation: Recognized as one of the best harbors in the state. G. S. Ry. jetty, 1350 feet long, will accommodate vessels drawing 32 feet. There is a town jetty for vessels of not more than 23 feet. Abundant fresh water supply. 3-ton steam-crane; 5-ton travelling steam-winch. Admiralty coaling station. Terminal of Great Southern railroad over which it is 341 miles to Perth Perth.

Imports: Coal, general merchandise.
Exports: Wool, skins, timber, sandalwood.
Albany is located on the north side of Princess Royal Harbor and King George's Sound. The channel is now being dredged and eventually will have a depth of 30 feet at low water.

## **AMAPALA** Honduras

Position: Latitude 13 degrees 13 minutes north, longitude 87 degrees 34 minutes west.

Population: 2,000.





Imports: Mining machinery, cotton fabrics, hardware, flour, and liquors.

Exports: Bar silver and gold, ore, coffee, hides, dye-

woods, etc.

Accommodation: There is a fine harbor, with sufficient water for the largest vessels, and good holding ground. Good water can be obtained, and also fresh meat, bread, and meal.

Port Charges: Clearance Fees, \$3 (U. S. cy.). Boat Hire, \$1.50 per trip. Ballast, \$3 (U. S. cy.) per ton. Port Dues \$3 per vessel. Brokerage, \$12. Stevedoring: Discharging, \$1.50 (U. S. cy.) per ton; average, 200 tons per day. Labor, 75c (U. S. cy.) per

## **AMOY** China

Position: Latitude 24 degrees 40 minutes north, longitude 118 degrees east.

Population: 114,000.

Population: 114,000.
Pilotage: Compulsory if steamers anchor; not compulsory if steamers proceed to recognized berths, i. e. buoys. Charges, steamers under 650 tons, \$10.00; over 650 tons 1½c per reg. ton. Sailing vessels, under 400 tons, \$10.00; over 400 tons, 2½c per reg. ton.
Port Charges: Customs tonnage dues are charged at the rate of Haikwan (i. e. customs) Tael 0.40 per net registered ton and is available at any Chinese Treaty Port for the period of 4 months; 1 Haikwan Tael is about Mexican \$1.57. Pilotage, Mexican 1½ cents on registered tonnage inwards and the same rate outwards.
Stevedoring: Rates for loading and discharging are

Stevedoring: Rates for loading and discharging are Stevedoring: Rates for loading and discharging are the same and are as follows on chief commodities—Grain, rice, wheat at 2 cents per bag; large beancake and flour at 70 cents per 100 pieces and per 100 bags; samshu (a Chinese wine) at 1½ cents per jar; small beancake at 40 cents per 100 pieces; merchandise (paper, tobacco leaf, etc.) at 5 cents per package; sugar (50 catty bags) at 1½ cents per bag. For overtime, double above rates. Coal, discharging, Coolie hire, 22 cents per ton; boat hire 16 cents per ton. Shipping off hunker coal boat hire, 16 cents per ton. Shipping off bunker coal, Coolie hire, 18 cents per ton, boat hire, 16 cents per ton. Coolie hire, 18 cents per ton, boat hire, 16 cents per ton. For overtime, double above rates. Cost per day for general labor, Mexican \$0.60 per head. Lighterage, cost per ton, Mex. \$0.30 to \$0.35 per ton. Lighterage, cost per lighter per day, Mex. \$6.00.

Accommodation: Wharf accommodation here is nil, There are two privately owned hulks, namely that of the China Navigation Co. and the China Merchants S. N. Co. and are solely for their own vessels. Steamers other than those that regularly ply to this port anchor in the harbor. Regular lines have buoys laid down for their use. Without the use of a pilot it is considered safe for a ship drawing not more than 18 feet to enter

port at L. W. Springs, at L. W. Neaps 21 feet. With pilot a draft of 30 feet at any tide is thought safe. There is one dock here, the New Amoy Dock Co., it is capable of receiving vessels up to 340 feet long, 40 feet beam and a mean draft of 15 feet. A large stock of everything

necessary for repairs is always kept in hand.
Imports: Beans, beancake, flour, samshu, rice, cotton, matches, stockfish, kerosene oil, wheat and general Chinese

produce

Exports: Paper, tobacco leaf, fruit, native brown sugar, earthenware, tea, sugar-candy, grass cloth, alum.

sugar, earthenwaré, tea. sugar-candy, grass cloth, alum. Names of Importing and Exporting Firms: Boyd & Co., Tait & Co.

Steamer Lines Using the Port: Douglas S. S. Co. Ltd., Hongkong. Swatow, Amoy and Foochow; Osaka Shosen Kaisha, Hongkong, Swatow, Amoy and Formosa; Seang Line of Steamers, Amoy, Swatow, Hongkong, Straits, Burma; Ho Hong S. S. Co. Ltd., Amoy, Swatow, Hongkong, Straits, Burma; Indo-China S. N. Co. Ltd., Amoy, Manila; China Navigation Co., Amoy, Manila and Shanghai, Amoy, Hongkong and Canton; Java-China-Japan Line, Java ports, Hongkong, Amoy, Shanghai, Dairen and Japanese ports. Japanese ports.

Consular Representation: Great Britain, United States, (C. F. Gauss, Consul), France, Belgium, Denmark, Norway, Holland, Portugal, Japan.

The port of Amoy has dwindled in importance since Formosa was ceded to Japan as a result of the Chino-Japan war, 1894. Up to that time Amoy was the port of shipment for Formosan tea but with shipping facilities now to be had in Formosa all tea is shipped from there. The revenue returns of the port, however, do not show its real worth for there is a great deal of undeveloped wealth in its minerals, principally coal and iron. There is a great "Coolie" traffic between Amcy and the Straits, some 80,000, roughly, going to and fro during the year. There is also a similar trade with the Philippines but the total here runs only into a few hundreds per annum.

## ANACORTES Washington

Population, 5,000. Longitude 122 degrees 38 minutes west, latitude 48 degrees 30 minutes north.

Distance: 65 miles north from Seattle, 47 miles east of Victoria, on Puget Sound.

Harbor depth: Average 40 to 50 feet. At some wharves 40 feet at face. Good anchorage.
Harbor master: Capt. Harry Rickaby.
Docks: Anacortes Lumber & Box Co., Great Northern

dock, Curtis wharf, Pacific-American Fisheries Co. dock, Alaska Packers Association dock, Apex Fish Co. dock, Coast Fish Co. dock, Anacortes Fisheries Co. dock, Matheson Fisheries Co. dock—all private wharves with accommodations for two or more ocean vessels at one time. City float, for small craft, owned by city.

Drydocks and marine railways: Keesling shipyard, small marine railway.

Customs representative: F. P. Zent, deputy collector.

Bonded warehouses: None.
Tug boat companies: C. A. Norton, Marion Johnson.
Railroad connections: Great Northern Railway.

Steamship lines: Puget Sound Navigation Co., Island Belt S. S. Co., Pacific S. S. Co., Border Line Transportation Co.

#### List of Charges

Towing: Puget Sound rates

Anchorage: None.
Wharfage: 25 to 50 cents per ton.
Stevedoring labor: 45 cents, overtime 55 cents per

Cartage: 50 cents per ton.

Water: 30 cents per 100 cubic feet for first 200; 20 cents per 100 cubic feet for next 200; 6 cents per 100 cubic feet thereafter.

Oil dock: Standard Oil Co. Customs brokers: Hensler & Co.



### **ANCHORAGE** Alaska

Located near the head of Cook Inlet. Government townsite surveyed in 1915. Temporary terminus of United States Railroad, but track now connected through to Seward, the sea terminus. Harbor, subject to extreme tidal range and open during summer season. All freight has to be lightered.

## **ANTOFAGASTA**

Position: Latitude 23 degrees 29 minutes south, longitude 70 degrees 25 minutes west.

Population: 45,000.
Pilotage: Not compulsory, \$40 steam, sailers \$2.50 per

Stevedoring: Rates for loading cargo, \$1 C. Cy. per ton. Overtime cost per hour, \$4 to \$5 C. Cy.; \$25 to \$35 per day C. Cy. for laborers.

Accommodation: Port illuminated by electricity. Facilities for embarking and discharging is good in regards to launches, tugs, etc. Vessels anchor in 15 to 20 fathoms. Approach to port dangerous because of detached rocks. Vessels anchor mile or mile and a half from shore. are prevalent and shipping is often stopped and lighter cargoes sometimes lost.

Imports: Coal, machinery, general merchandise for Bolivia for which this is port of entry and transit.

Exports: Nitrates, silver, copper, borate of lime, etc. Steamer Lines Using the Port: P. S. N. Co., C. S. A. V., weekly. Most all lines that come to South America call.

Consular Representation: All important countries that

are represented in Valparaiso.

Charges: Light dues, steamers 60 centavos; sailing ves-Charges: Light dues, steamers 60 centavos; sailing vessels, 40 centavos per registered ton. Hospital dues, 10 centavos per registered ton. Towing (in bay), up to 1,500 registered tons, \$50; over 1,500 tons, \$5 for each 100 tons additional. Launching nitrates, \$15 per 1,000 quintals. Loading and stowing nitrate, 24 centavos per ton; metals in bags, 24 centavos per ton, in bulk, 20½ centavos per ton. Discharging coal (bulk), 24 to 34 centavos per ton; in bags, same, with additional charge of 17½ centavos per ton for bagging. Stevedore labor, \$1.25 per day. Brokerage, \$50 in and same out. Commission on chartering, 2½ age, \$50 in and same out. Commission on chartering, 2½ per cent. Collecting for freight, 2½ per cent. Ballast, \$3 gold per ton. Water, \$2.43 per ton.

Loading and discharging by lighters. Moles owned and

operated by Yungay, Nitrate Agencies, Ltd., Salitres de Antofagasta, Barnett & Co., Antofagasta & Bolivia Rail-

way, Lewis & Co.

## **ANTUNG** Manchuria

Population: 6,000; Shahocken, 30,000.

Antung is both a river port and a seaport, situated 23 miles from the mouth of the River Yalu. The town occupies the Manchurian bank of the river where the stream separates Manchuria from Chosen.

Yalu timber is the principal export.

Imports: Cotton piece goods, drills, dyed and mercerized cotton yarn, bags, rice, soap.

Exports: Yalu timber, wild silk cocoons, matches,

bean oil.

Consular Representation: Great Britain, Japan, United States.

## **ARICA**

Position: Latitude 18 degrees 28 minutes south, longitude 70 degrees 21 minutes west.

Population: 8,300. Pilotage: Not compulsory.

Stevedoring: Rates for loading and discharging cargo, general cargo, \$1 per ton. Overtime cost per hour, \$2.

Cost for general labor, daily labor \$22 per day. Labor SCATCE.

Accommodation: Two piers, one wharf, cargoes, loaded and unloaded into lighters by means of steam cranes. Passengers usually pay one peso for transportation to shore. From 350 to 400 tons can be unloaded daily. Weights up to 10 tons can be handled. Vessels moor in 8 fathoms, about a half mile or mile from shore.

Imports: Rice, coal, machinery, merchandise,

Exports: Borax, wool, copper, cotton, salt, sulphur.
Steamer Lines Using the Port: South American Company, Toyo Kisen Kaisha, P. S. N. C., local lines, Lamport & Holt, Gulf Line, West Coast Roland Line (latter lines irregular).

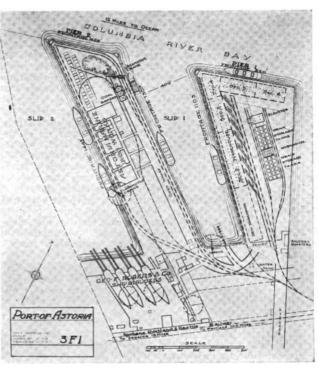
## **ASTORIA**

#### Oregon

Position: Latitude 46 degress 16 minutes 29 seconds north, longitude 124 degrees 3 minutes 11 seconds west. Population: 30.000

Astoria is situated on a peninsula bounded on the north by the great Columbia and on the south and west by Young's River and Young's Bay, and is recognized as one of the leading industrial marts of Oregon. It is a port that must grow in maritime prominence as the Pacific Coast of America develops in its relations with the rest of the world.

Accommodation: The harbor is one of only five deep water harbors on the entire Pacific Coast. Its position is ideal with reference to river, rail and ocean transportation, being only ten miles inland and in direct communication with the lumber, grain and fruit lands of the Pacific northwest. Astoria is geographically the nearest port of the United States to the Orient and having a harbor entrance of 40 feet of water in a channel 1,300 feet wide, while for a width of approximately 1,000 feet there is 42 feet at low tide. The anchorage is good throughout, having 12 square miles of anchorage ground over which the depth is from 24 to 70 feet at low water, and for 8 square miles the depth is from 30 to 70 feet. It is a fresh water harbor, free from the ravages of "Teredo Navalies" and always free from ice, and by the construction of the jetty, protected from the ocean swell.



Drawing Showing Port of Astoria's Two Piers

Towage: The charges for towage, round trip, are as follows: Between sea-to Astoria Vessels of up to 400 tons net register.....\$210.00 401 " 500 551 " 750 751 " 1000 1001 " 1200 1201 " 1500 1501 " 1800 1801 " 2500 2501 " 3000 3001 " 3500 3501 " 3500 .. ..... 262.50 " ..... 315.00 ...... 385.00 455.00 490.00 525.00 " .. " " " ..... 630.00 ..... 675.00 3501

Vessels with auxiliary power will be towed, or conveyed between sea and anchorage inside Columbia River if vessel's power is used during movement, at a rate of \$125.00 for assistance in each direction. The above rates are thirty per cent cheaper than rate charged to Portland and without any risk of grounding or delays between this harbor and Portland which is 100 miles inland. Bar pilotage rates for steam or sailing vessels between sea and Astoria are \$1.50 per foot and 1 cent per ton net register in each direction.

Wharves The following is a list of wharves, other than port of Astoria wharves, which are mentioned under port of Astoria facilities:

G. W. Sanborn & Sons......580 "

All of the above wharves are accessible either by rail or river transportation.

Water: Fresh water is supplied to vessels at the wharves at a charge of

1,000	gallons\$1.00	50,000	gallons\$11.80
3,000		100,000	" 17.80
5,000 10,000	" 2.80 " 4.30	200,000	" 27.80
20,000	" 4.30 " 6.80	500,000	" 54.80
30,000	" 8.80	1,000,000	" 94.80

Industries: Astoria is the leading commercial city and main trading center of a district which is the home of five great industries: (1) salmon fishing; (2) lumbering; (3) shipbuilding; (4) Marine Iron Works, and (5) cranberries. The salmon fisheries have long been looked upon as the most important of these industries, approximately 5,000 people are engaged in the fishing business every year, during 1917 there were 547,805 full cases packed and it is estimated that the pack for 1918 will have been between 725,000 and 750,000 cases.

Oregon contains one-sixth of the standing timber of Oregon contains one-sixth of the standing timber of the world today and Clatsop County contains one-sixth of the standing timber in the State of Oregon or in the neighborhood of 18,000,000,000 feet. The local lumber mills namely: Hammond Lumber Company, Oregon Pacific Lumber Co., Astoria Box Co., Knappton Mill & Lumber Co., and the Astoria Lumber Co., have paid out for labor in the past twelve months over a million dollars.

The Astoria Flowing Mills Company have an output of

The Astoria Flouring Mills Company have an output of 1,200 barrels per day and furnishes employment to forty men, the "Knighthood Brand" being the leading flour milled. Proof of their business success is exemplified in their having operated day and night continuously for the past year.

The Astoria Pulp & Paper Company furnishes employment to 100 men, its principal output at this time is producing chip board, used in making cardboard boxes. Additional machinery is now being installed to increase its

capacity and augment the variety of products.

Port of Astoria Facilities: The Port of Astoria consists of two piers. Pier 1 is 1,320 feet long and 92 feet wide with a floor area of 121,440 square feet. At the present time the warehouse is filled to its capacity with canned salmon, flour, wheat and Emergency Fleet machin-ery. Grain may be piled twenty sacks high, flour eighteen

sacks high, 140 pounds per sack; and salmon eighteen cases high.

The warehouse is equipped with automatic fire sprink-lers which reduces the rate of insurance to a very low cost; it is also equipped with large electric conveyors which convey various commodities over the track or side of ship at the rate of 420 feet per minute.

of ship at the rate of 420 feet per minute.

On this pier are also located bulk grain storage elevators with a capacity of 1,300,000 bushels, and unloading capacity of 15,000 bushels per hour to either cars or boat.

The port has a trackage capacity of 100 cars.

On Pier No. 2, which is 1,300 feet long and 344 feet wide, is located the Astoria Marine Iron Works, which is installing machinery in the Emergency Fleet ships built on the Columbia River. This pier is used for the astembling of lumber and soil carriers and for the hadsembling of lumber and coal cargoes, and for the hand-ling of heavy and bulky articles, four cranes being operling of heavy and bulky articles, four cranes being operated, one electric and three locomotive, 15, 20, 35 and 50 tons respectively. This pier has a capacity of 100 cars, having five tracks extending the entire length of the pier. Coal bunkers are located on this pier with a capacity of 3,000 tons and open storage capacity for 20,000 tons. These bunkers have a discharging capacity of 200 tons

per hour.

At the present time the port has on storage the United States Shipping Board and Thorndyke-Trenholme Company coal. The port people are also negotiating with Utah concerns for exporting 5,000 tons of bunker coal, but at the present time no definite arrangements have been made.

The depth of water in between slips and along the dock is thirty feet at low tide and 5,550 linear feet of berthing capacity is available. Between the two piers is located a gridiron which is used for the loading and unloading of locomotives on own wheels and for the repairing of small crafts and barges.

In order to deepen the channels of the tributaries to the Columbia River near Astoria, which improves the sites for new industries, the port purchased a large steel dredge for this purpose. This dredge pumps 8,000 to 10,000 yards per day, running three shifts with a crew of thirty men, 4,000 feet of pipe line being available at all times. Comfortable sleeping quarters are built aboard the dredge as well as many other conveniences for the employees. connection with this dredge is operated the dredge tender "Natoma" which is used for local work in connection with the dredging and for local towing in the harbor.

The Belt Line Railroad is practically completed from its connection with the Spokane, Portland & Seattle Ry. Co's at the port of Astoria dock, extending around Smith's Point, serving the three shipyards, namely: Rodgers, Wilson and McEachern and the Astoria Paper & Pulp Mill. The building of this railroad has greatly benefited industries located on Young's Bay, as heretofore they have

depended altogether on water transportation.

The port invites parties seeking sites for industrial purposes to make investigation.

Plans and specifications are now being made for the construction of a 15,000 ton dry-dock and Import and Export pier which will be located just to the west of Pier No. 2.

Wharf and Dock Charges (O.-W. R. R. & N. Co. Dock at Astoria).

The following rates of dockage will apply on vessels using dockage facilities of this company at Astoria, Ore., and not receiving or discharging freight. The right is reserved to refuse dockage facilities to any vessel.

Vessels landing to receive or discharge pilot, \$2.50 per day.

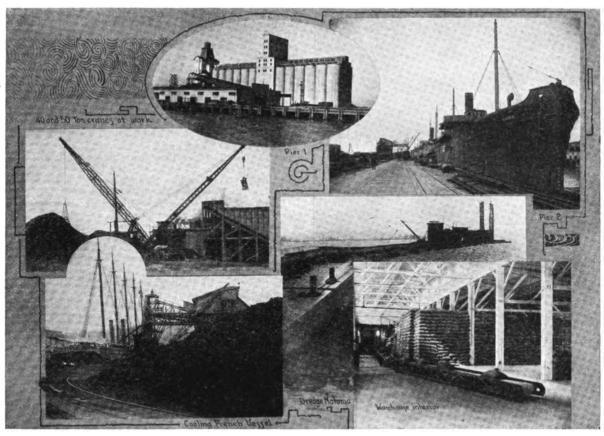
Vessels 500 net registered tonnage and under, \$5 per day. Vessels 500 and not over 1,000 net registered tonnage, \$8 per day. Vessels 1,000 and not over 2,000 net registered tonnage,

\$12 per day.
Vessels 2,000 and not over 3,000 net registered tonnage,

\$15 per day.
Gasoline schooners, steam pile drivers, steam barges,

steam scows or derricks, \$1 per day.
Gasoline launches, fishing boats or sailing yachts or sail boats, 50 cents per day.

All other small craft not included in the above, 50 cents per day.



Scenes Showing Views Along Asteria's Waterfront, and Facilities for Handling Shipping

Freight, any quantity, handled over docks operated by this company at Astoria, Ore., will be subject to wharfage charges as follows:

Freight not otherwise specified, 25 cents per ton of 2,000 pounds or 40 cubic feet, whichever makes the greater

charge.

Lumber, 50 cents per 1,000 feet; minimum charge 25 cents. Live stock, 25 cents per head; minimum charge, 25 cents. Fishing boats, \$1 each; minimum charge, 25 cents.

Wharfage includes free storage on dock not to exceed five days, exclusive of Sundays and legal holidays.

a. Freight, any quantity, stored on docks operated by this company at Astoria, Ore., will be subject to storage charges of 25 cents per ton of 2,000 pounds or 40 cubic feet, whichever makes the greater charge, for each 30 days or fraction thereof.

b. Cement, any quantity, stored on docks operated by this company at Astoria, Ore., will be subject to storage charges of 25 cents per ton of 2,000 pounds for the first 30 days or fraction thereof, and 10 cents per ton of 2,000 pounds for each subsequent 30 days or fraction thereof, in addition to piling charges of 10 cents per ton of 2,000 pounds.

c. Canned goods or pickled fish, any quantity, held in storage on wharves or in warehouses operated by this company at Astoria, Ore., for shipment via the lines of this company, will be subject to storage charges as follows: First 30 days, free; each succeeding 30 days or fraction thereof, per ton of 2,000 pounds, 25 cents.

(S. P. & S. Dock).

Dockage, per day or fraction thereof, \$5.
Wharfage: For all freight handled across the dock, per ton, 25 cents. For piling or repiling cement, per ton, 10 cents. Handling cement from warehouse to car, per ton, 15 cents. Handling all other classes of freight from warehouse to cars, at cost.

Storage, per ton per month 25 cents.
All charges collectable from ship, unles

All charges collectable from ship, unless otherwise arranged.

Harbor master: F. M. Sweet. No mooring or anchorage charges.

Bonded warehouse: Great Northern Pacific S. S. Co., capacity about 12,000 tons.

Customs brokers: E. M. Cherry, V. Boelling.

Stevedore charges: About same as all other Pacific Coast ports.

Steamship Lines: San Francisco & Portland S. S. Co., Oregon-Washington R. R. & N. Co., agents; to California ports, North Pacific S. S. Co., Spokane, Portland & Seattle Ry. Co., agents; to California ports. Great Northern Pacific S. S. Co., Sanborn & Sons agents; to San Francisco. Elmore Transportation Co., S. Elmore & Co.; to Oregon ports. Harkins Transportation Co.; to Columbia river points and Portland Oregon-Washington R. R. & N. Co.; to Portland and way points. Atlantic & Pacific S. S. Co., W. R. Grace & Co., agents; to New York, also South American ports.

Tow boat companies: Puget Sound Tug Boat Co., the Port of Portland.

Lighterage companies: Callender Navigation Co. Marine ways: Wilson Bros., for small craft; McEachern Ship Co.

Oil docks: Standard Oil Co., Union Oil Co.

Railroad connections: Spokane, Portland & Seattle Ry. connects all roads. Oregon-Washington R. R. & N. Co. connects by boat from Astoria to Portland.

connects by boat from Astoria to Portland.
Shipbuilding concerns: Wilson Bros., Astoria Boat Co.,
Frank Smith, McEachern Ship Co., George F. Rodgers

Boating is done by Harbor Master F. M. Sweet for vessels in harbor.

Customs: Deputy C. H. Haddix, N. J. Judah, A. Karinen.

Public Health Service, United States: Dr. H. G. Ebert, surgeon in charge; Dr. Jay Tuttle, assistant surgeon.

U. S. Immigration Service: E. C. Gooch, inspector in charge.



Queen Street Pier. Auckland

## **AUCKLAND** New Zealand

Position: Latitude 36 degrees 50 minutes south, longitude 174 degrees 48 minutes east.

Population: 120,000.

Auckland Harbor consists of an extensive land-locked estuary at the southern end of the Hauraki Gulf, on the east coast of the North Island of New Zealand. The outer harbor commences about six miles from the North Head. a promontory which forms the northern boundary of the inner harbor (known as Waitemata). The inner harbor is about 15 miles long, by a width varying from two miles at the entrance to a mile. The deep water channel has an average width of three-quarters of a mile. The harbor is completely sheltered from all winds by an out-lying chain of islands and the peninsula above referred to, and is capable of affording safe and sheltered anchorage for the whole of the world's navies. There is a depth of nine fathoms at low water spring tides, which shoals in some places to five fathoms. The tide rises and falls from 8 to 12 feet.

The railway communication with the interior runs to the end of the Railway Wharf. The export stores for frozen meat are adjacent to the last named wharf, and the ocean-going cargo steamers load large quantities of frozen beef and mutton with rapidity from these stores. An abundant supply of the purest water, brought by the city waterworks from distant springs, is available at the wharves, a flow for shipping purposes of 60,000 gallons an hour being obtainable.

United States Consul General, Alfred A. Winslow. Pilotage: Compulsory. Steam, 2d per ton (net) in and 2d per ton out; sailing, 2d per ton (net) in and 2d per ton out if employing a tug; sailing, 3d per ton out if

not employing a tug.

Port Charges: Goods, general merchandise, 2/- per ton inward, 1/- per ton outwards. Transshipment half rates on inward charges. Produce, 1/6 per ton inwards, 1/- per ton outwards. Customs, 3/- per hour overtime when employed. Transshipment, ship's wharfage 1/4d per ton per day net tonnage. Light dues, 4d per ton net reg., payable at first port of call, and ¼d per ton at subsequent ports of call, while working the New Zealand coast. Berthage, ¼d per ton per day. Port charges, 3d per ton, good for six months. Towage, as arranged with harbor master.

Stevedoring: Discharging—Measurement cargo, discharging 1/4 per ton; trucking, sorting and stacking in shed, 1/2 per ton; total, 2/6 per ton. Weight cargo, 1/8 per ton; trucking, sorting and stacking in shed, 1/6 per ton; total, 3/2 per ton. Special cargo consisting of ton; total, 3/2 per ton. Special cargo consisting of manures, bar iron, rails, girders, angles over 25 feet long, pebbles, cast iron, pipes, discharging, 1/8 per ton; trucking, sorting and stacking in shed, 1/9 per ton; total, 3/5 per ton. Case oil, discharging, 1/10 per ton; trucking, sorting and stacking in shed, 1/- per ton; total, 2/10 per ton. When consignee takes delivery from stages the trucking rate is 7d per ton instead of 1/-.

Heavy lifts, 2 and under 3 tons, 10/- per ton; 3 and under 5 tons, 17/6 per ton; 5 and under 10 tons, 27/6 per ton; 10 and under 20 tons, 30/- per ton; 20 and under 80 tons. 32/6 per ton. The ship to pay for extra labor incurred when trucking long distance on wharves.

Loading: All bale goods, 1/3 per bale; kauri gum, 2/10 per ton; copra and general cargo, 3/- per ton; tallow, pelts and other casks, 3/- per ton; frozen meat and dairy produce—carcases, sheep and lamb, 15/6 per 100; beef, per quarter, 6d; frozen sundries, such as bags and cases, kidneys, 2d per 60 lbs.; legs, etc., 2/- per 100; butter, 15/6 per 100 cheese, 3d per crate.

In the event of loading at Whangarei, Auckland rates

to apply plus cost of traveling, board and lodging.

Overtime: Ship to pay the difference between ordinary time and overtime also the difference for holidays and meal hours at Auckland and outports. All gear to be found by the ship for loading and discharging except when required for heavy lifts, when the gear will be found by stevedores, who also supply meat slings and shoots and

All workmen in the stevedore's employ to be kept insured by them against any claims arising under the Workers' Compensation for Accidents Act and its Amendments and / or Common Law, and / or Public Risk at the cost and expense of the stevedores.

The system of receiving cargo in Auckland differs from that of any port in New Zealand.

At Auckland the stevedore not only discharges the ship, but has also to receive the cargo from ship's slings, truck into sheds, sort out to various marks and stack up under the direction of the harbor board, and for which the ship has to pay, the harbor board doing absolutely nothing in the way of receiving cargo and taking no responsibility, thus, the Auckland stevedoring charges may appear unduly high compared with other New Zealand ports, but are not so when the above is taken into consideration.

Cost per hour for general labor, 1/10 per hour. Overtime cost per hour, 2/8 per hour to 10 p. m.

The Port of Auckland has a very fine harbor with most up-to-date ferro concrete docks, and facilities for loading and unloading cargo by electrical cranes installed on the wharves and two floating cranes, with capacity of one up to 80 tons. Re-inforced ferro concrete wharves with single and double story sheds. Oversea berthage 7,204 feet, coastal 4,732 feet. Auckland is 1,315 miles from Sydney, and 1,650 miles from Melbourne. Oceanic mail liners from Vancouver to Sydney make Auckland first and last Australasian port of call.

Accommodation is also provided on both sides of harbor for ferry steamers. Total berthage 23,474 lineal feet. Three wharves are connected with the Railway System of New Zealand; 5,750 feet of berthage is served with railway lines. Depth of water at wharves varies from 6 feet to 35 feet at L. W. O. S. T. Rise and fall of tides from 8 feet to 10 feet 6 inches. Nineteen storage sheds have floor area of 365,019 square feet and gross capacity of 7,931,410 cubic feet. Good steam coal is obtainable from hulks.

Docking Accommodations: One dock of 566 feet in length with a depth of water on sill at O. S. correll by 33 feet capable of taking a vessel of 540 feet overell by

33 feet, capable of taking a vessel of 540 feet overall by 64 feet beam. Two patent slipways, one capable of taking vessels up to 200 tons and the other up to 600 tons gross. Imports: 1916, £7,362,778.

Exports: 1916, £5,894,785.

The oyster catch for the 1918 season in Auckland exceeded the yield of any previous year, totalling about 10,000 sacks, or about 2,000 sacks more than the 1917 yield.

Advanced prices gave the growers a big return. Of the 60,661 cases of fresh apples imported into New Zealand during the year, 53,942 cases were received at Auckland. The greatest portion of the fruit came from the United

States and Canada.

Names of Importing and Exporting Firms: Arch, Clark & Sons Ltd., soft goods; L. C. Gillespie & Sons, general merchants; A. S. Paterson & Co. Ltd., general merchants; N. Z. Loan & Mercantile Agency Co. Ltd., John Burns & Co. Ltd., iron and steel; Dalgety & Co. Ltd., L. D. Nathan Ltd., general merchants; Wright Stevenson Co., Ltd., gen-

Steamer Lines Using the Port: N. Z. Shipping Co., Shaw Savill Co., Union S. S. Co., Huddart Parker, Federal Shire Houlder, Commonwealth & Dominion and Luckenbach S. S. Co.

Consular Representation: Belgium, Chile, Denmark, France, Italy, Japan, Mexico, Netherlands, Norway, Peru, Portugal, Russia, Sweden, Switzerland, United States.

### **BALBOA** Panama

Latitude 8 degrees 57 minutes north, longitude 79 degrees 28 minutes west.

Pilotage: Compulsory. Rates, inwards and outwards \$1.00 per foot draft. No pilotage is charged vessels which pass through the Panama Canal without taking

on or discharging cargo or passengers at ports.

Port Charges: Harbor dues, none. Water, 25c per 1000 gallons, minimum, \$3. All quarantine regulations are enforced by U. S. officials.

Accommodation: Vessels are prohibited from anchoring near the islands of Naos, Flamenco, and Perico on account of the military works. Vessels anchor in roadstead outside canal entrance to await health officers. Channel from entrance of Canal to wharves is 45 ft., and largest vessels can be berthed at Balboa. Coaling plant, 200,000 tons cap.; two 250-ton floating cranes; dry dock 1000 ft. long, 100 ft. wide, 35 ft. over blocks mean tide. HT. 24 ft., O. T., rise and fall, 18 feet.

Exports: Bananas, ivory nuts, manganese, hides,

skins, rubber.

Imports: Provisions, clothing, boots and shoes, lum-

ber, machinery, foodstuffs.

Work is under way to increase the depth of the water at berths to a maximum of 45 feet. There are machine shops in operation capable of repairing any kind of machinery.



Shop Buildings and Dry Dock at Balbea Copyrighted by Underwood & Underwood

### **BALIK PAPAN**

## Island of Borneo, Dutch East Indies

Position; Latitude 1 degree 16 minutes 12 seconds south, longitude 116 degrees 44 minutes east.
Population: Europeans, 350; Asiatics, about 7,000.
Pilotage: Compulsory. In and out for ships of less than 500 M3 net f. 5; in or out for ships of 500 M3 net and more, f. 10; for the Balikpapan Bay increased with 1½ cents per M3 net. (Half a guilder is not taken into calculation; if more than half, full guilder

is charged.)

Harbor and Anchorage Dues: These dues which are valid for six months throughout the whole Dutch East Indian ports are per M3 net capacity of steamer, f. 16. This sum has only to be paid once every six months and need not be paid within this time in any other port of the Dutch East Indies when the receipt can be shown. If the master cannot produce this receipt the dues have to be paid again, but a duplicate can be procured and refund made on application (on stamped petition form) to the Director of tion (on stamped petition form) to the Director of Finance at Batavia. A steamer calling to bunker only

does not pay any harbor and anchorage dues.

Port Charges: Tonnage or wharf dues, none.

Customs, watchman's overtime f. 1. per hour between 6 p. m. and 6 a. m. Sundays and other official holidays.

Light dues, none.

Stevedoring: As per arrangements with De Bataafsche Petroleum Maatschappij. Lighterage cost per lighter per day, f. 25 to f. 30. Bill of Health (Dutch), free. Signing on and/or of per man in the office during office Signing on and/or of per man in the office during office hours, free. Signing on and/or off per man on board at f. .50 per man with a minimum fee of f. 10. Port clearance, f. 1.50. Cost of preparing and drawing up "Zeeverklaring" (sea protests) per hour, f. 3. Seal "Sea Protest" f. 1.50. Certificate of test, harbormaster's endorsement, per set, f. 2. For every additional set required, f. 2. Harbormaster's overtime per hour (or part thereof) f. 2.50. Harbormaster's overtime on Sundays and other official holidays, f. 10.

Accommodation: There are eight jetties in all one

Accommodation: There are eight jetties in all, one government and seven owned by De Bataafsche Petroleum Maatschappij. Depth of water at low water spring tides alongside wharves ranges from 10 feet to

35 feet.

Imports: General.

Exports: Petroleum and its products.
Exporting firm: Messrs. De Bataafsche Petroleum

Steamer Lines using the Port: The Anglo Saxon Petroleum Co. Ltd., The Ocean Steamship Co. Ltd., The China Mutual Steam Nav. Co. Ltd., The Nanyo Yusen Kaisha Ltd., The Java Pacific Line, The Java-China-Japan Line, Stoomv: Maaty "Nederland," Stoomv: Maaty "Rotterdamsche Lloyd," and Koninklyke Paketvaart Maatschappij.

Fuel oil bunkers can be supplied to vessels at all piers of De Bataafsche Petroleum Maatschappij.

## BANGKOK

Position: Latitude 6 degrees 20 minutes north; longitude 97 to 106 degrees east.

Population: 628,675.

the report of the statistical office of the Siamese customs for the fiscal year ended March 31, 1918, shows that the total value of the trade at the Port of Bangkok for this period amounted to \$81,722,898, an increase of \$4,271,414, as compared with the corresponding period of 1916-17. The report of the statistical office of the Siamese

Port Charges: Lighterage, rice in bags to Kohaichang, including towage, 15 tical cents per picul of 133 ½ pounds, and for rice meal 17½ tical cents per picul; teak squares, ticals 7.00 per load of 50 cubic feet; teak planks and scantlings, ticals 6.00 per load of 50 cubic feet; (lighterage rates on other articles

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vary). Lighterage, present cost per lighter per day, about ticals 1050 (say £80 per day) of say 250 tons capacity. Import duty invariably is 3 per cent ad valorem, except for beers and wines, and the rate for these is 5 per cent, according to alcoholic strength.

Stevedoring: Ocean cargo—Loading rice and/or meal, including laying dunnage, per ton, ticals 0.29 to 0.31; mats (for dunnage) per 100, ticals 10.00 to 14.00; bamboos (for dunnage), per 1000, ticals 45.00 to 50.00; dunnage wood, per 1000, ticals 20.00 to 25.00; winchmen, per man per day, ticals 2.00; beaters for rice meal, per man per day, ticals 1.00; nightwork from 6 to i2 p. m., per gang, ticals 20.00; loading general cargo. per ton weight or measurement, ticals 0.28 to 0.30. Overhead charge for rice and rice meal—Loading rice and/ or meal, including side and bottom dunnage, ticals 0.60 to 0.63; mats, bamboo and dunnage wood, per ton, ticals 0.60 to 0.63. Extras—Beater for rice per ton, ticals 0.60 to 0.63. Extras—Beater for rice meal, per man per day, ticals 1.00; night work from 6 to 12 p. m., per gang, ticals 20.00. Local cargo—Loading rice and/or broken rice, and/or meal at Bangkok and/or Kohsichang, ticals 7.50 per picul 1000. Loading general cargo, ticals 4.50 per boat lcad. Loading timbers of all sorts, ticals 60/1000 (60 cts.) per ton. Shifting coal from hold to bunkers, ticals 50/100 (50 cts.) per ton, or ticals 30/100 (30cts.) per ton, according to nature of work, the contractor supplying his own baskets and shovels. For discharging—Kerosene oil, ticals 1.50 per 100 cases and/or 200 tins; general cargo, ticals 0.40 to ticals 0.50 per ton weight or measurement; extra for night work, per gang, ticals or measurement; extra for night work, per gang, ticals 7.50 from 6 p. m. to midnight, ticals 7.50 from midnight to 6 a. m. The above rates include winchmen.

Light Dues: 5 tical cents per ton net register for vessels entering river and half for vessels anchoring outside or at Kohsichang. Coasters, 3 1-3 tical cents per ton.

Towage to and from the Bar: Vessels up to 200 tons register one way only, 220 ticals, with 15 or 20 ticals additional for every 50 tons up to 1500 tons, when the charge is 650 ticals; 35 ticals for every 100 over 1500 tons. Up and down, 200 tons and under, 320 ticals, additional 50 tons up to 1500, 25 ticals; for every additional 100 tons over 1500, 50 ticals.

Pilotage: Not compulsory. From the bar to Bangkok and from Bangkok to a safe anchorage outside the bar inclusive. Rates for steamers and also for sailing vessels being towed, ships of over 150 tons register and under 200 tons ticals 137.50, increasing to ships of over 950 tons register and under 1000 tons, ticals 225.00; ships of over 1000 tons register, ticals 228.00; if over 1000 tons ticals 2 per every 50 tons additional. Rates for sailing vessels not being towed, 15 per cent additional. On the engagement of a pilot the charges are both for inward and outward pilotage and not separately.

Present Exchange: 1 tical equals about 1s. 61/2d.

Imports: Textiles, provisions, raw materials, metals, gunny bags, tobacco, machinery, automobiles, railway equipment.

Exports: Rice, teak, hides, pepper, fish, salt, bullocks.
Accommodation: All private. The port has no government provision. The river is wide and navigable for most ocean-going steamers which can cross the

Names of Importing and Exporting Firms: The Anglo-Siam Corp. Ltd., Borneo Co. Ltd., Bombay Burma Trading Corporation Ltd., L. T. Leonowens Ltd., East Asiatic Co. Ltd., Diethelm & Co. Ltd.

Steamer lines Using the Port: Ellerman & Bucknall S. S. Co. Ltd., Europe and United States; East Asiatic, Co. Ltd., Europe direct line: Straits S. S. Co. Ltd., Singapore; Indo-China Steam Navigation Co., Hongkong; Siam Steam Navigation Co. Ltd., Singapore and coast ports en route; Butterfield & Swire, Hongkong; Chino-Steam Navigation Co. Ltd. Hongkong

Siam Steam Navigation Co. Ltd., Hongkong.
Consular Representation: Norway, Denmark, Spain,
Turkey, Legations—Great Britain, France, United
States (Carl C. Hanson, vice-consul in charge), Belgium,
Russia, Italy, Portugal, Japan.

Pier at Batavia-Copyrighted by Underwood & Underwood

## **BATAVIA** Island of Java, Dutch East Indies

Population: 139,000.

Agency Fees: As per agreement, Berthing and Mooring: Berthing fl. 3.50, mooring, fl.

3.50.

Consular Fees: Signing of articles, fl. 4.50; bill of health, fl. 6. Drawing up protest, fl. 6.
United States Consul: John F. Jewell.
Customs Fees: Fl. 20 (night and holiday permits)

for each gate where cargo is being handled.

Hire for Steam Launches: Fl. 6 for one run from

steamer to shore.

Light Dues and Dutch Harbor and Anchorage Dues: Fl. 0.16 per M3. per 6 months, to be paid at the first port of call.

Quay Dues: Fl. 0.04 per meter for each hour. Wharf Dues: Fl. 0.03 per meter for each hour.

Buoy Dues: Fl. 3 for each buoy for 24 hours. Lighterage: Fl. 2 per koyang (inward), fl. 3 per koyang (outward) from Batavia, fl. 2 per koyang (outward) from Priok.

Pilotage: From 1,500 up to 2,500 M3. fl. 10; fl. 5 extra for every 1,000 M3 or portion thereof. Night tariff, 6 p. m. till 6 a. m., double fee.

Rates: Fl. 0.65 per M3.

The Java-China-Japan Line makes Batavia a west-

ward port of call.

Stevedoring: Tariff of stevedoring per ton of 40 cu. ft. for general cargo, 5 per cent to be deducted from the total amount and an allowance of 20 per cent the total amount and an allowance of 20 per cent is made on the quantity of cargo loaded for broken stowage. Loading of general cargo from the shore or from the lighters, day fl. 0.45, night fl. 0.65; loading of general cargo from the godown, day fl. 0.80, night fl. 1.20; discharging of cargo and stowing in godown. day fl. 0.80, night fl. 1.20; Discharging of cargo into lighters, day fl. 0.40, night fl. 0.60; discharging and unloading along the quay, day fl. 0.90, night, fl. 1.20; discharging of cargo into lighters and from the lighters into godowns, day fl. 1.15, night fl. 1.45.

Batavia, capital of Java, is the center of a district in

Batavia, capital of Java, is the center of a district in which there are almost 114,000,000 acres under cultivation. The chief products of the soil include rice, maize,

arachis, and cotton.

## BELAWAN (See Medan) Island of Sumatra, Dutch East Indies



### **BELLINGHAM**

#### Washington

Longitude 121 degrees 30 minutes west, latitude 45 degrees north.

Population, 31,143.

Depth of harbor: 5 to 13 fathoms. Harbor master: H. W. Baty.

No mooring buoys.

No mooring buoys.

Docks, piers and wharves: Inland Navigation Co., 70x

200 feet; L. B. Quackenbush (2 floors) 165x125 feet; D.

Campbell, 100x200 feet; Bellingham Canning Co., 160x200

feet; Bellingham Flour Mills Co., 50x350 feet; Pacific

American Fisheries (3 docks) approximately 14 acres;

Sehome Dock (2), 50x200 feet and 30x300 feet.

Steamship lines, local agents and offices: Border Line

Transportation Co., W. H. Williams, agent, 1202 Elk St.;

Pacific S. S. Co., Raleigh Dickinson, agent, office Sehome

Dock; Puget Sound Navigation Co., Citizens Dock, C. B.

La Farge, agent; Inter-Island S. S. Co., Citizens Dock.

Tow boat companies: Reifsnyder Towing Co., Peacock

Tow boat companies: Reifsnyder Towing Co., Peacock Towing Co., Crews Towing & Barge Co.
Oil docks: Standard Oil Co., Olympic Portland Cement

Co. Railroad connections: Great Northern, Northern,

Northern Pacific, Milwaukee and Canadian Pacific. Customs representatives: O. D. McDonald, deputy col-

lector; George Hubbard, inspector. Bonded warehouses: None. Customs broker: Thos. H. Cole.
Drydocks and marine railways: None.
Shipbuilders: Kirby Shipyards.

#### List of Charges

Towing: See Puget Sound rates.

Anchorage: None.
Wharfage: 25 cents per ton on cargo.
Stevedore labor: 50-60 cents per hour; overtime, 75-90 cents.

Storage: Private companies.
Cartage: 500 pounds 25 cents; 500-1,000 pounds, 50 cents; 1,000-1,500 pounds, 65 cents; over 1,500 pounds, 75 cents per ton.

Coaling: No facilities, Water: 300 to 30,000 cubic feet, 6 cents per cubic foot;

over 30,000 cubic feet, 3 cents per cubic foot.
Industries adjacent to shipping: Fish canneries, lumber mills, tile factory, machine shops and smaller industries.

## **BLUFF HARBOR** New Zealand

Position: Latitude 46 degrees 36 minutes 17 seconds south, longitude 168 degrees 21 minutes 55 seconds east.

First port of arrival and last of departure for Melbourne steamers, and serves as a port of entry for vessels too large for accommodation at Invercargill.

Population: 2,000. Pilotage: 2½d reg. ton, inwards and outwards.

Protoage: 2/2d reg. ton, inwards and outwards.

Port Charges. 3d per ton, maximum of 9d per ton in any six months. Ballast, 3/- to 4/6 per ton. Light dues, steamers arriving, foreign, 6d ton. Towage, sea to wharf inwards or outwards, 5d reg. ton; vessels in ballast, inwards or outwards, including pilotage, 6d ton.

Stevedoring: 1/8 per hour. Overtime cost per hour,

2/6.

Imports: Timber, coal, guano, general. Exports: Frozen meats, wool, hides, flax, fats, cased meats, tallow, skins and pelts, oysters, fish, butter, cheese, preserved rabbits.

Accommodation: Safe harbor for ships of moderate tonnage. Depth alongside wharves, 18 to 31 feet. Four hoisting engines.

## **BOMBAY**

Position: Latitude 18 degrees 54 minutes north, longitude 72 degrees 49 minutes east.

Population: 860.000.

Bombay, the chief seaport and city of Western India. is situated at the southern extremity of the Island of Bombay, and is the capital of the Presidency of the same name. Causeways and breakwaters connect Bombay with Salsette Island and the mainland. There are two harbors, one on the inside, and the other on the Back Bay, outside. The inner harbor, which is a land-locked harbor of water 14 miles long and 5 miles wide, is considered to be one of the finest in the world. Here are found commodious docks for the handling of the largest sized vessels, shipbuilding slips, basins and a government dockyard covering about 200 The port is excellently situated for commerce, being in a direct line between Calcutta and Aden.

Bombay rivals Calcutta as a vast commercial depot, and outstrips the Hooghly river port in the extent of its internal trade. The capital city virtually has a monopoly on the import and export trade of the Presidency in its capacity as a distributing point for the contiguous territory.

Here are the terminals of two great railway lines, namely the Great Indian Peninsula Railway, and the Bombay, Baroda, and Central India Railway, and the railway depot is one of the best in the world. The railway lines connect with Delhi, Peshawar, Calcutta and Madras.

#### Natives Are Best Managers

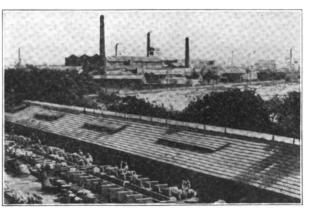
The greatest industrial activity of the port revolves around the manufacture of yarn and cotton cloth. Great steam spinning and weaving mills are maintained in turning out the manufactured cloth. In 1916, of a total of 6,840,000 spindles, and 110,300 looms engaged in the textile industry in India, it was found that one-third of these spindles were located in or near Bombay, and of the 2,200,000 bales of cotton consumed, over half was consumed at Bombay. Hand-loom weavers are in a great majority over the number of power-loom weavers. Most of the machinery used is of British manufacture. The native Indians are recognized as conducting the best managed mills in Bombay, and the number of skilled weavers employed in the industry is rapidly increasing.

ployed in the industry is rapidly increasing.

The war has had its effect in changing the source to which Bombay presidency formerly looked for its supply of aniline and alizarine dyes. Switzerland, Italy, Germany, and Belgium supplied most of the aniline dyes in pre-war days, and Germany and Great Britain were depended upon for alizarine dyes. A decline in imports from Switzerland and Italy, and the practical cessation of shipments from Belgium and Germany, resulted in putting the United Kingdom in control of the trade in alizarine dyes ments from Belgium and Germany, resulted in putting the United Kingdom in control of the trade in alizarine dyes in 1917, and imports of aniline dyes began a steady increase. The United States entered the market with 2,086 pounds of aniline dyes in 1916, and the following year imports rose to 370,869 pounds, for which greatly increased prices were received. The aggregate value of the 1917 shipments amounted to \$1,253,956.

#### Is Now a Leather Exporter

Hides previously sent abroad for tanning are now tanned locally, another change wrought by conditions imposed by the great war, thus putting Bombay down as an exporter



Main Industrial District—Copyrighted by Underwood & Underwood



Rajabai Tewer-Copyrighted by Underwood and Underwood

of leather. Shipments of hides to the United States have been increasing steadily during the last few years.

The principal countries trading with Bombay are the United Kingdom, Japan, Java, and the United States. Japan and the United States have shown the greatest increases in imports to Bombay. The most important re-cent gains by the United States have been in aniline dyes, hardware, metals, motor cars, and wood products. Other imports received from the United States are chemicals and chemical products, drugs and medicines, electrical apparatus, kerosene oil, print paper and tobacco.

Bombay exports chiefly to China, France, Hongkong, Italy, Japan and the United Kingdom. Exports to the United States totalled only \$5,000,000 in 1916, which was much less than received by the other countries.

Principal Imports: Apparel, chemicals, drugs and medicines, fruits and vegetables, glass and glassware, hardware, implements and tools, liquors, textiles and other machinery, matches, metals (aluminum, brass, bronze, copper, iron and steel), motor cars, kerosene oil, paper and pasteboard, precious stones, railway plant and rolling stock, spices, cotton twist and yarn, piece goods, silks.

Exports: Dyeing and tanning material, grain, pulse and

flour, skins, leather, oil seeds, tea, cotton, raw wool.
Consular Representation: Belgium, Brazil, Chile, Cuba,
Denmark, France, Italy, Japan, Netherlands, Norway,
Spain, Sweden, Switzerland, United States (Selby S. Coleman, vice-consul).

Names of Importing and Exporting Firms: Bombay Co. (coal importers), Bhimji Jayray & Co., Allen Bros. & Co., Lyon, Lord & Co., Ltd. (cotton exporters), The Napier Trading Co., Ltd., Par & Co., Danny & Co. (shoe importers), Roberts John & Co., Ltd. (furniture importers), M. B. Mehta & Co., Cooper & Co., Continental Commercial Trading Co.

Steamship Lines: Asiatic S. N. Co., Bombay and Africa, Bombay and Persia, British India S. N. Co., Nippon Yusen Kaisha, Occidental & Oriental S. S. Co., Osaka Shosen Kaisha, Pacific Mail S. S. Co., P. & O. S. N. Co., Wilson Line.

Accommodation: Anchorage is on west side of harbor. Extra spring rise, 17 feet; ordinary, 14 to 15 feet; north Extra spring rise, 17 feet; ordinary, 14 to 15 feet; north rise, 11 feet. There are three wet docks, the Prince's (30 acres, 14 ft. on sill), Victoria (25 acres, 16 ft. on sill), and Alexandra docks (49½ acres, inner sill 23 ft., outer sill 27 ft.), and two dry docks, the Merewether dry dock (500 ft. long by 65 ft. 6 in. wide by 14 ft. on sill), entered from Prince's dock, and Hughes dry dock (1,000 ft. long by 100 ft. wide and 22 ft. on sill, divided near the center so that it can be used as one or two docks), entered from the Alexandra dock. Hydraulic cranes available for use in the wet docks one to lift 100 tons, one 30 tons, one 5 tons, four 6 or 3 tons, 68 at present to lift 35 cwt. and 113 to lift 30 cwts. There are besides five other dry docks, belonging to the government, the P. and O. and B. I. S. N. Co., and a patent slip privately owned.

Port Charges: Port dues, 1 anna per reg. ton per month; Prince's, Victoria and Alexandra dock dues, 11/2 pies per ton per diem on vessels under 1,500 tons, and 2

pies on vessels of 1,500 tons and over; cranes (30 and 35 cwts.) hired at rs 6 per diem. Charges at the docks on goods vary according to class. The import wharfage on cotton piece goods is 6 annas a bale up to 400 feet, and 12 annas over 400 feet; iron rs 1/8 per ton; grain, 12 annas per ron: seeds (oil), 12 annas per ton; other than oil seeds, rs 1-12 per ton; cotton raw, Indian pressed, 4 annas per bale of 3½ cwt.; American or other pressed, bale of 4 cwt., or over, 6 annas; Egyptian, 6 cwt. bales, 6 annas; kerosene oil and coal are discharged into lighters in the stream; kerosene in bulk is discharged at the bulk oil steamer berth at Alexandra dock; non-dangerous petroleum in bulk can be discharged in docks at a special berth 6 pies per eight Imperial gallons.

Pilotage: In and out of harbor, for sailing vessels and steamers from 100 tons upwards, during the fair season and during the S. W. monsoon; the S. W. monsoon comand during the S. W. monsoon; the S. W. monsoon commences June 1 and ends September 30. Steamers, minimum 100 to 300 reg. tons. Fair season rs. 25. S. W. monsoon seasons rs. 37. Sailing vessels, Fair Season, 41 rs. S. W. monsoon season rs. 62. Steamers, maximum 2,100 to 2,200 reg. tons, Fair season rs. 72. S. W. monsoon season rs. 84. Sailing vessels, Fair season rs. 120 S. W. monsoon season rs 140. And an increase of rs. 4-2 for every 100 tons or part, on sailing ships, and rs 2-8 for every 100 tons or part, on steamers above this tonnage every 100 tons, or part, on steamers above this tonnage during Fair season; and in addition thereto an extra rate of rs 20-10 on sailing ships, and rs 12-6 on steamers during S. W. monsoon. Transporting fees in ships: 1,500 tons and upwards, rs 30; 1,000 tons to 1,500 tons, rs 25 under 1,000 tons, rs. 20. Steamers using their own engines: from one berth to another south of Cross Island or to or from any of the docks or to any berth north of Cross Island, or vice versa, rs. 20; transporting north of Cross Island rs 15; sailing ships or steamers towed to or from any dock north of Cross Island from or to fixed moorings north of Cross Island will be charged rs 15. Fees at the above rate shall cover the services of a pilot for all duties connected with the movement, anchorage or mooring of a vessel entering or leaving port for a period of 12 hours from the time of joining the vessel, but if his services are required for more than 12 hours, an additional transporting or attendance fee, as the case may be, shall be charged. For taking a vessel from Butcher Island, Pir Pao, Hog Island or Nocar Point to sea, or to any point or mooring in the harbor, or vice versa, and for vessels proceeding on a trial-trip, a single pilotage fee shall be charged; but where a vessel proceeding to sea from Butcher Island, Pir Pao, Hog Island or Nocar Point is at the wish of the master anchored in the harbor to complete ship's business, then a pilotage fee and a half shall be charged. Vessels arriving with gunpowder, or not moored in the harbor, on the day of arrival, shall pay an attendance fee of rs 20. supplied to shipping in harbor at rs. 1/2 per ton.

Towage Steam or sail. Assisting a vessel at the dock entrance, rs 50; if tug attends, but is not used rs 30; towing a vessel through the dock channel to or from a berth north of Cross Island, of 1,500 tons reg. rs. 100; towing from the docks to anchorage south of Cross Island or vice versa, similarly, rs 100 and 150. Towing from dock or stream to Sunk Rock or vice versa, similarly, rs 150 and 200. Towing from dock or stream to Floating Light or vice versa, rs 200 and 250; detention of tug per half hour, rs 25; remooring a vessel, rs 100; attending a vessel on fire, first 24 hours, rs 150; second, same., rs 120. Note rupee—1/4.

## BRISBANE Queensland, Australia

Position: Latitude 27 degrees 30 minutes south, longitude 152 degrees 58 minutes east.

Population: 51,680.

Moreton Bay is the sheet of water separating Strad-

broke and Moreton islands from the mainland.

Cape Moreton is in latitude 27 degrees 2 minutes 17 seconds south, longitude 153 degrees 29 minutes east, and is a telegraph and signal station. The pilots cruise inside the cape during the day, and strangers should not attempt to enter without one.

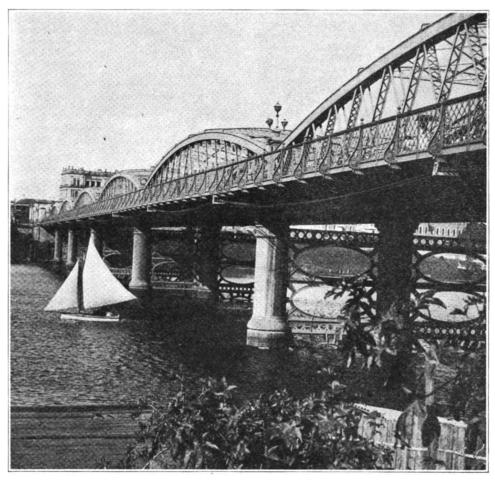
The north or Howe channel is that most used. has a depth of 20 feet at low water, and is lit for use at night by leading lights placed on the western shores of Moreton island; but by going further to the northward some 20 miles, and using the northwest channel, the port can be entered by day with nothing less than six fathoms.

Berthage: ½d. per ton per day on gross register. Towage: £15 to £20 in the Brisbane river.

Water: 4s. per 1,000 gallons.

#### Brisbane Port and Shipping Charges

Reporting at customs: Entry in, with cargo, £5 5s.: clearing out, with cargo, £5; entering in, in ballast,



Victoria Bridge at Brisbane—Copyrighted by Underwood & Underwood

The anchorage at the roads off the mouth of the Brisbane river is about 30 miles from the cape. Vessels unable to ascend the river to Brisbane anchor here in four fathoms, about three miles from the shore. The holding ground is good and the anchorage safe.

At present 11 feet at low water springs can be carried from the roads to town, the rise and fall varying from five to seven feet. With good tides, therefore, vessels drawing 20 feet can come up to the wharves in Brisbane, and have no difficulty in passing up and down the river by night and day; indeed, from the way in which the channel is lighted with leading lights, it is almost easier to navigate by night than day. Sailing vessels require to be towed.

The government dry dock at Brisbane is 430 feet long on the blocks 60 feet wide at the entrance, and 1912 feet over the sill at high water. There are also three patent slips.

### Port Charges

Steamers calling at Brisbane, Rockhampton, Bundaberg, Townsville, and all other Queensland ports are subject to the following port charges, viz.: Light dues: 9d. per ton on net register covers a

period of 3 months. Harbor dues: Inward and outward, 2s. per ton.

£2; clearing out, in ballast, £2.
Noting protest: Foreign, £1; intercolonial, 10s. 6d.
Tonnage or wharf dues: ½d. per ton per day on gross tonnage, divisible into quarter days; 9d. per ton on net reg. tonnage, payable at first Australian port, and expires three month later.

Ballast: Sand ballast, 2s. to 2s. 3d. per ton; stone ballast, 3s. to 4s. per ton; shingle ballast, 4s. 6d. to

Vessels arriving in ballast would have to pay 1s. per ton for discharging. Lighters might carry it away free to other vessels ballasting, but if it had to be discharged from lighters the expense would be rather heavy

Clerking: Delivery clerks, 10s. per day.
Wharf accommodation: There are plenty of wharves available for the discharge of vessels up to 400 feet.
Drydock for use by smaller vessels: Depth of water from 24 to 26 feet.

Exempt masters: Steamers or sailers pay 6d. per

There is a Government graving dock, 430x50x19 feet.
Imports: Chiefly manufactured goods.
Exports: Wood, meat, tallow, hides, ores.

Names of Importing and Exporting Firms: Geo. Wills & Co. Ltd., Dalgety & Co. Ltd., Brabant & Co., Thos. Brown & Sons Ltd., Smellic & Co. Ltd., E. Rich

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& Co. Ltd., J. C. Hutton Pty., Alex. Stewart & Sons, Finney Isles & Co., Taylor & Colledge.

Steamer Lines using the Port: Blue Funnel, P. & O. Branch Service, P. & O. S. N. Co., White Star, Aberdeen, Orient, Clan, Commonwealth & Dominion all U. K. Nippon Yuson Kaisha, Australian, Oriental, China, and Japan.

Consular Representation: France, Belgium, United States, Chile, Denmark, Greece, Netherlands, Norway, Panama, Russia, Spain, Switzerland, Sweden, Italy.

Pilotage: Compulsory. Inwards, on net. reg. tonnage. 6d. per ton; outwards, on net reg. tonnage, 6d. per ton. If steamer is in ballast, a pilotage rate of 3d. per ton on net reg. tonnage is charged each way. Any foreign or intercolonial vessel, the master of which is not exempt from pilotage, shall if cleared for more than one port in Queensland pay one pilotage rate of 8d. per ton at the first port entered, and one pilotage rate of 4d, per ton at the second port of entry, but shall not be required to pay any further pilotage at any other port included in her original clearance. Vessels, whose original port of clearance and final port of discharge are not within the Colony, calling at any Queensland port, but not carrying cargo coastwise, shall be exempt from the payment of pilotage rates, but shall pay on all passengers and cargo landed or shipped the undermentioned dues, as follows: For every ton of cargo, 1/6; for every passenger, 1/6; for every head of horses or horned cattle, 1/6; for every sheep, 2d.

Stevedoring: Discharging general cargo, inclusive of winchmen, unless otherwise stated, weight and measurements according to Ship's Manifest; measurement 2/6 per ton, weight, 3/- per ton. Special rates; rails, fishplates, pig iron, girders, plates, pipes and tubes, rails, fishplates, pig iron, girders, plates, pipes and tubes, 3/3 per ton; plate glass, 7/9 per ton; slates, bricks, scrap iron and tiles, 5/- per ton; salt (rock), 3/3 per ton. Timber and grain to be dealt with as occasion arises. Discharging heavy lifts: Rates per ton, over 2 tons and under 3 tons, 5/-; over 3 tons and under 5 tons, 20/-; over 5 tons and under 10 tons 25/-; over 10 tons and under 15 tons, 40/-; over 15 tons and under 20 tons, 50/-; above 20 tons—by arrangement. The excess of the measurement over the weight to be charged at measurement rate of 2/6 per ton. be charged at measurement rate of 2/6 per ton

Overtime cost per hour: General cargo, 2/7½; refrigerated cargo, 2/11½. Cost per hour for general labor, 1/9; refrigerated cargo, 2/1.

Lighterage: No fixed rates; general cargo, per ton D. W. or measurement from 3/3 to 3/6. Waiting time, when incurred, to be paid in addition to regular rates. If the work is performed on holidays or Sundays or in overtime hours, the actual cost of labor in excess of the ordinary day working rate will be charged be-sides regular rates. Lighter takes cargo from edge of wharf, or if practicable from ship's gear, and delivers to edge of wharf or to ship's gear. There are no fixed rates for lighterage at present, but those given are indicative of the rates that would be charged.

Demurrage: The periods of time before demurrage

commences, from time of being ordered, which shall apply for each separate job, to be as follows: For quantities of 50 tons or under, 24 running hours; for quantities of from 50 to 75 tons, 36 running hours; for quantities of from 75 to 100 tons, 48 running hours; for quantities exceeding 100 tons, 48 running hours to be allowed for the first 100 tons, and laying hours for the balance to be as arranged. The rate chargeable for demurrage on lighters when the foregoing limits are exceeded, to be a minimum of 5/- per hour for a small lighter. Large lighters 15/- per hour. These rates provide for lighter loading at one berth and discharging at another berth. For any deviation from route, or for any additional shift, an extra charge will be made.

Loading charges: General cargo, inclusive of winchmen, weight or measurement according to Ship's Manifest, unless otherwise stated. Rates for taking in and stowing only: Dumped or undumped wool and cetton, 1/9 per bale; taking in for re-stowage elsewhere, 1/-

per bale; leather, skins, basils and dry hides, 2/6 per bale; tallow, 4/6 per ton; wet hides, including spreading, 9/- per ton; wet hides in bags, single or rolls. 5/per ton; dry hides—loose, 7/6 per ton; trimmings. per ton; dry hides—loose, 7/6 per ton; trimmings. glue pieces, hoofs, horns and bones in bags or bales. 6/- per ton; lead, tin, bullion, metal and bagged ore. 3/- per ton; copper blister, 3/ per ton; timber, 10/- per 1000 s. ft.; general cargo, 4/- per ton.

Loading refrigerated cargo, inclusive of winchmen: Frozen cargo, excepting butter, 5/3 per ton; butter, 5/3 per ton of 40 boxes; cheese, 6/- per ton.

All over divites for overtime and extra labor to be

All expenditure for overtime and extra labor to be charged to steamers, plus Worker's Compensation Insurance, plus a fee of 15 per cent for supervision.

Eastern and island steamers to be charged all costs, plus Worker's Compensation Insurance, plus 15% super-

vision without responsibility, excepting in case of wool, for which 1/9 per bale is to be charged for taking in and stowing.

#### Length and Depth of Wharves

	Length	Depth
A. U. S. N. Co. Ltd	1786′	23′
Wharves [Howard Smith, Ltd.,]		
Brisbane & W. Collin & Sons	1475'	23′
Ltd. Ltd.		
Birt & Co. Ltd	1426′	24' & 26
Coal Wharf (Sth. Brisbane)	1203′	24'
Railway (Pinkenba)	1041′	26 <i>'</i>
Brisbane Steve. & W. D. Co. Ltd.	1000′	25′
Dalgety & Co. Ltd	952'	24 <i>'</i>
Adelaide Steamship Co	830′	26'
Kennedy	744'	26'
Daiston Millian Co		
Brisbane Milling Co	680′	15'
Mercantile Wharf & Stevedoring		
Co	582′	24′
Thos, Brown & Sons, Ltd	500′	23′
Australian Meat Export Co., Ltd.	475'	26'
Clan Line	465'	25'
Borthwick & Sons (Aust.) Ltd.	360′	2 <b>4</b> ′
Q. M. E. Co., Ltd	350′	2 <b>4</b> ′
Colonial Sugar Refinery Co	200′	18′

## **BUENAVENTURA** Colombia

Position: Latitude 3 degrees 48 minutes north. longitude 77 degrees 12 minutes west.
Population: 4,000.

Vessels anchor with draft of Accommodation: 24 feet; good harbor.

Imports: Textiles, food stuffs, flour, kerosene, hardware.

Exports: Coffee, gold, emeralds, rubber, tagua nuts. hides, skins, Panama hats.

Steamer Lines Using the Port: English steamers call.
Colombia landing place of West Coast Cable Co.
Names of Importing and Exporting Firms: Adolfo
Cuenas, Iuri & Cobo, B. Lopez & Co., Perez & Co., A.
Pagnamenta & Co., Hing Chon Chan & Co.
One of the most important Colombian ports on
Pacific. Situated on Cascajal Island. Any kind of steamers may come close to shore. No principal ports on Pacific Coast. Goods are generally delivered at Panama and sent by rail or coast boats. Buenaventura is destined to become important for all the western region of Colombia. It is the port for the interior city of Cali which has a population of about 30,000 and is

republic.

## **BUNBURY** Western Australia

considered one of the most advanced cities of the

The harbor is situated in Koombana Bay at the entrance to Leschenault estuary, 107 miles from Perth. Population: 3,560.



Pilotage: Compulsory. Maximum charge, £11; removals, under 1,000 tons, £2; over 1,000 tons, £3.

Port Charges: Tonnage dues, 3d. per ton reg. Berth-

ing, 1d. per ton on cargo or ballast, loaded or discharged. Light dues, 2d. per ton reg. inwards or outwards.

Accommodation: Harbor protected by 4,800 foot mole. Jetty, 4,238 feet long which has berthing head 1,768 feet long and 47½ feet wide, with 27-foot depth at sea end, and 14 feet at inner end, ordinary spring tide. Viaduct connecting jetty with Bunbury Railway tracks.

Cranes, 25-ton, two 5-ton; and one 3-ton. Jetty has 10 berths. Railway connections with Perth.

Imports: General

Exports: Wheat, tin, wool, coal.

## BUNDABERG Queensland, Australia

Bundaberg's importance lies in the large agricultural district of which it is the center. The town is situated on the Burnett river, and is 217 miles north of Brison the Duriett river, and is 217 miles north of Brisbane, and to which rail and steamer service is maintained. Population, 12,000.

Position: Latitude 24 degrees, 53 minutes south, longitude 152 degrees 51 minutes east.

Pilotage: 5d. per ton.

For port charges see Brisbane.

## **CAIRNS**

## Oueensland, Australia

Position: Latitude 16 degrees 54 minutes south, longitude 145 degrees 44 minutes east.
Population: 6,500.
Pilotage: 4d. per ton.
Port charges: Harbor dues, 4/ per ton inwards or outwards. Other rates same as Brisbane.
Exports: Minerals, sugar.
The distance to Brisbane is 900 Miles

The distance to Brisbane is 900 Miles.

## **CALCUTTA** India

Position: Latitude 22 degrees 34 minutes north, longi-

tude 88 degrees 20 minutes east.
Population: 1,300,000, with suburbs.

Calcutta, the second largest city in the British Empire, is situated on the left bank of the river Hooghly, an arm of the Ganges. It is the chief port of India and the ninth largest port in the world. Approximately two-thirds of the commerce of British India is carried on in Calcutta. Connected with the rich interior districts by railways and rivers, Calcutta is situated so as to receive the products of export from what is the richest producing country in all of India. The commodities brought to Calcutta by river boats and railways keep the wheels moving in hundreds of factories, mills, and other industries in the vicinity of the

The city is spread out along the banks of the Hooghly for a distance of about 5 miles, and extends back from the edge of the river for a distance varying from one to two miles. The breadth of the river opposite the city extends from a quarter to three-quarters of a mile. The harbor, which is controlled by a board of port commissioners, affords excellent anchorage, and is equipped with ten graving docks and dry docks running from 225 feet to 710 feet in length. Ships drawing 30 feet can ascend from the sea—about 86 miles distant—to Calcutta.

Benefited by Railways

The communications of Calcutta afford great facilities for the extensive commerce carried on within the port. Three important railway lines, running to various parts of India, operate out of Calcutta and Howrah—the East Indian Railway, and the Eastern Bengal State Railway terminate at Howrah, on the opposite side of the river.

These lines give Calcutta connection with Bombay, Benares, Delhi, and Gulunda. Howrah and Calcutta are connected by a huge pontoon bridge costing over a million dollars, it being used by foot passengers and vehicles. It opens at one end to permit the passage of boats up and down the river.

Water communication is carried on in three directions. Several rivers running east converge with the Brahma-putra; the Hooghly and Nadiya rivers wind their way north to the Ganges, and the Midnapur Canal throws a connect-

ing link into the western districts.

Calcutta, the world's premier exporter of jute, receives this product largely from Bengal. Jute exports average about \$144,000,000 annually. India's manufactured jute goes to all parts of the world, the largest buyers being the United Kingdom, Russia, Australia, Chile, the United States, France, Cuba, Java, and Argentina. Shipments of gunnies to the United States have been steadily increasing, and design 1019 are the scalles for the content of the cont and during 1918 one ship sailing from Calcutta carried 800 tons of gunnies, valued at \$2,000,000 to that country. There are numerous large jute manufactories in Calcutta and the immediate vicinity.

#### Passing of the Wooden Plow

The cultivation of tea, cotton, wheat, rice, linseed and other seeds, and indigo is carried on extensively in the districts from which the metropolis of India draws its products. Much of the wheat of the northwest, and tea of Assam finds an outlet at Calcutta. The enormity of the agricultural industry, which sustains about two-thirds of the population, and its steady development along more scientific lines, is gradually causing the disappearance of the primitive cultivation methods so long in use. The traditional bullock-driven, country nagar, a plow composed of wood shod with an iron point as a share, and fitted with a wooden pole, is being supplanted by modern farm implements. European and American reaping and threshing machines are coming into use. Further stimulus is being given the introduction of modern methods by a growing shortage of labor and advances in the scale of wages.

Calcutta and its suburbs abound in factories, mills, and foundries of almost every description. There are large jute manufactories, iron works, timber yards, cotton spinning and weaving manufactories, paper mills, bone mills, flour mills, rice mills, oil mills, shellac factories, indigo factories, match factories, a saltpetre refinery, pencil factory, ice factory, chemical works, sugar works, paint works, jute presses, foundries and roperies.

The vessels of several large steamship companies ply the rivers, engaging in an extensive coasting trade, partic-

ularly among the Orissa ports.



Glimpse of the Great Harbor-Copyrighted by Underwood & Underwood

#### Imports and Exports

Imports: Coal, iron, salt, apparel, hardware, stationary machinery, malt liquors, wine and spirits, petroleum, flour, tobacco, cotton goods.

Exports: Jute and jute goods, opium, tea, grain and pulse, oil seeds, raw cotton, indigo, hides and skins, silk and silk goods, wheat, indigo, coffee, teak, sandal wood,

ebony, rice.

Names of Importing and Exporting Firms: Shaw Wallace & Co., Allen Berry (motor vehicles and accessories), Allen Yule & Co., Anderson, Wright & Co. (castor oil), Oosman Jamall & Co., British Thomson & Co., Ltd. (electrical supplies), Siddessur Sen Co., M. N. Mehta, Bengal Paper Mill Co., Masuda Trading Co., Ltd.

Steamship Lines: American and Indian Line, Australian and Indian Line, China Mutual S. N. Co., Harrison Line, Indo-China S. N. Co., Java-Bengal Line, Netherlands Royal M. S. N. Co., Nippon Yusen Kaisha, Occidental-Oriental S. S. Co., Ocean S. S. Co., Orient Royal Mail Packet Line, Pacific Mail S. S. Co., P. & O. S. N Co., Rotterdam Lloyd S. N. Co., Royal Packet S. N. Co., Russian Volunteer Fleet, Toyo Kisen Kaisha.

Consular Representation: United States (James A.

Consular Representation: United States (James A. Smith, consul-general), Spain, Norway, Argentine, Belgium, Japan, Mexico, Netherlands, New Zealand, Bolivia, Brazil, Chile, Costa Rica, Ecuador, France, Guatemala, Peru, Russia, Siam, Sweden.

Accommodation: Ships of 8,000 tons can ascend to city, the statement of the statement

where jetty and mooring accommodations may be had. pilots practically take vessels of any draft up and down pilots practically take vessels of any draft up and down the river, but the maximum draft may be called 30 feet. Ten graving and dry docks, length from 225 feet to 710 feet. Ample fixed and floating cranage accommodations Port charges: Harbormaster's fees vary according to the work required. Hospital dues, 4½ pies per ton. Transporting, each way, 14rs. Hauling in and out of moorings, 16rs each operation. Mooring hire ranges from 1½rs for vessel under 200 tons to 15rs for vessels of 3,000 tons and upward. Port dues, 4 annas per ton cargo, and 3 annas hallast. Loading and uploading: general 3½ to and 3 annas ballast. Loading and unloading; general 3½ to 4 annas per ton, and 5 annas per ton for timber. Pilotage, compulsory above Eastern Channel Light. Sometimes, owing to the state of the bar in the upper reaches during neap tides, inward vessels, deeply laden, have to be neaped at Diamond Harbor. This takes place during the months of December to May inclusive. The pilotage is divided into twelfths for the convenience of charging intermediate or broken pilotage—viz., from sea to places short of Calcutta, and from and to intermediate places, as also for the purpose of the proportionate reduction, (one-fourth) being made when vessels are tugged by steam any portion of the distance. Steamers or sailing vessels taking steam any part of the distance are entitled to a reduction of one-fourth from the charges for such portion of the distance. Towage. No tariff. A written agreement is always drawn up.

## **CALDERA** Chile

Position: Latitude 27 degrees 3 minutes south, longitude 75 degrees 53 minutes west.

Population: 4,500.

Pilotage: Not compulsory. \$40 C. Cy., sailers or

steamers.

Port Charges: Customs, \$29.60 revenue stamps. Light and hospital dues, \$75. (Pesos.) Other charges, agent's fees, \$50; captain of port, \$9. (The foregoing amounts given are pesos, three equal to \$1.00 Am. gold, at present exchange, 17 pence.)
Stevedoring: Rates for loading cargo, \$1.50. Rates

for discharging cargo, \$2.00. Overtime cost per hour, dcuble ordinary charges. Cost per hour for general labor, \$10 per day. Lighterage, cost per ton, \$1.50. Lighterage, cost per lighter per day, \$10.50 to \$12.

Accommodation: Government wharf. The bay is

always quiet, and affords good moorings. Depth, 10 to 30 fathoms. There is hardly ever a working day lost in a year, the harbor being recognized as one of

the best on the coast. Passenger mole; railway and customs mole; discharge 250 to 350 tons per day; lift 20 tons by crane; 5 steam, 2 hand cranes.

Imports: Mining and agricultural machinery; coal, iron

bricks, sugar, candles.

bricks, sugar, candles.

Exports: All classes of minerals, copper matte, bars, gold, silver, chinchilla, skins.

Names of Importing and Exporting Firms: Josiah Rogers, Emilio Maggi, Cruz A. Lopez, Jacue e Hijos, B. Tornini i Cia, Luis Maldini, American Smelting and Refining Co., Juan Tomas Morong, Dellard Fireres. Steamer Lines Using the Port: Pacific Steam Navigation Co., Cia Sud Americana de Vapores, North Pacific Line, New York Pacific Line, Merchants Line, Lamport & Holt.

Consular Representation: United States Great Reight.

Consular Representation: United States, Great Britain, Peru, Bolivia, Mexico.

The Copiapo Railroad, built in 1848, was the first railway established in South America. The line runs to Copiapo, capital of the province, and there branches out in three directions. Two of the roads serve the mining districts, and the third follows the river to San Antonio, traveling through a country rich with cattle.

## **CALLAO**

#### Peru

Position: Latitude 12 degrees 4 minutes south, longitude 77 degrees 15 minutes west.

Population: 35,000.

Pilotage: Not compulsory.

Port Charges: Discharging, foreign merchandise, \$1.36 per metric ton; ccal, \$1.02; lumber per ton of 423 48/100 ft., \$1.02; merchandise, (Peruvian Coast), 68c. Loading, all kinds of merchandise, about 68c per metric ton and 30c per ton. Light dues, 2c silver per ton, payable every time vessel enters port. Hospital tax, 4c ton. Established steamship lines pay ½c per ton. Acton. Established steamship lines pay ½c per ton. Anchorage dues, 20c per ton payable every six month. Ballast, \$1.34 per ton. Stamped paper for obtaining clearance from Prefecture and Custcm House, \$1.64. Captain of the port, \$2.50 for signing sailing license and crew lists. Bill of Health free.

Accommodation: Anchorage in 7 to 10 fathoms. 5-ton steam cranes; 35-ton iron shears. Floating dry dock 385 feet long lifts vessels of 7,000 tons, with draft of 22 feet of water.

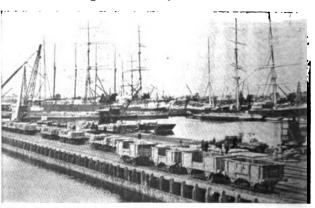
draft of 22 feet of water.

Imports: Textiles, mining machinery, railway sup-

Exports: Textnes, mining machinery, railway supplies, farm machinery, general merchandise.

Exports: Copper, gold, silver, mercury, vanadium, quinine, wool, sugar, hides, petroleum.

United States Consul General: Wm. M. Handley. Callao is one of the most important ports along the Pacific Coast of South America since it is the port for Lima, (Population 200,000) the capital of the country, which is about 8 miles distant. A splendid electric railway service is maintained to Lima from Callao, the trip lasting about 20 minutes. The docks are quite modern and large vessels may unload on them.



Callae, Port for Lima

majority of the vessels anchor a short distance from the shore and goods and passengers are taken on lighters to the land. Railways lead from Callao to the capital, and to interior points of the republic.

## **CANTON**

Position: Latitude 23 degrees 70 minutes north, longitude 113 degrees 15 minutes east.
Population: 900,000.

Pilotage: Not compulsory. Whampoa to Hongkong, Macao, or sea, and vice versa, 6 to 10 ft., \$12.50; over 10 to 18 ft. \$25; over 18 ft. to 20 ft. \$30; over 20 ft. to 22ft. \$40; over 22 to 23 ft. \$50; over 23 ft. \$60. Whampoa to Canton and vice versa, under 12 ft. \$10; over 12 ft. \$15. Sailing vessels, Whampoa to Hongkong and

vice versa, 5 cents per ton.

Port Charges: All port charges covered by China
Coast Tonnage Dues, viz., Haikwan Taels 0.40 per net reg.
ton, payable every 4 months.

Stevedoring: For loading and discharging cargo, although no fixed rate, the usual price paid is about 10 cents Mex. per ton. Overtime cost, say 50c Mex. per man from 6 p. m. to midnight, and 50c Mex. midnight to 6 a. m. Cost for general labor, 50 cents Mex. per day per man. Lighterage, cost per ton, no fixed rates. Lighterage, cost per lighter per day, \$6 for 60 ton lighter.

Accommodation: Only private wharves of river steamer lines and China Navigation Co. Ltd. Nearest docks at Hongkong. Draft of water, say, neap tides 13

to 14 feet; spring tides, about 17 feet
Imports: Rice, sugar, cotton and woolen piece

goods, kerosene, general.

Exports: Silk, cassia, matting, preserves.

Names of Importing and Exporting Firms: Deacon & Co. Ltd., Dodwell & Co. Ltd., T. E. Griffith, Ltd., Jardine, Matheson & Co. Ltd., Reiss & Co., Shewan, Tomes & Co.

Steamer Lines Using the Port: Hongkong-Canton-Macao Steamboat Co., river steamers running between Hongkong and Canton; Indo China S. N. Co. Ltd., China Navigation Co. Ltd., China Merchants S. N. Co.,

running to China coast ports.

Consular Representation: Great Britain, United States (A. W. Pontius, consul general), France, Russia, Japan, Italy, Portugal, Norway, Sweden, Holland.

Practically all cargo imported from or exported to European or American ports is transhipped at Hongkong, being carried between that port and Canton by river steamers.

#### Harbor Regulations

1. The term "vessel" in these regulations refers to vessels of foreign type. Regulations concerning native type craft are embodied herein only insofar as is necessary for their due control when working in connection with foreign type vessels. They are regulated in other respects by special notifications.

#### Whampoa Anchorages

The anchorages in Whampoa for vessels of foreign type are:

(a) For vessels other than those provided for in (b) and (c); that part of Cambridge Reach which lies between Cambridge Barrier and Gully Point.

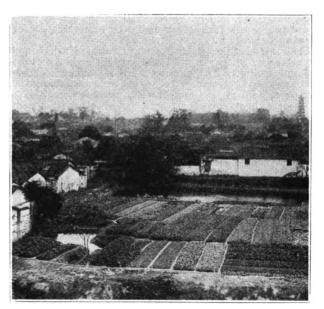
(b) For vessels with explosives, high inflammables, or mineral oil on board as cargo: that part of anchorage (a) which lies between Cambridge Barrier and the northwest point of No. 4 Flat Island.

(c) For quarantine purposes: that part of Belcher Reach below the southeast point of First Bar Island.

3. Vessels in anchorage (a) and (b) will be moored under the directions of the berthing officer.

#### Canton Anchorages

4. The anchorages at Canton for vessels of foreign type are:



Canton Vesstable Garden

For vessels other than those provided for in (b) and (c); that part of the river which is limited to the southward by Macao Fort, to the westward by Lochun Creek and the Puntong Railway bridge, and to the eastward by Shekchung Creek and Chunlung Creek.

(b) For vessels with mineral oil, etc.; that part of anchorage (a) which lies between Vegetable Creek and

Bird's Nest Rock.

(c) For quarantine purposes, for vessels with explosives, or with highly inflammable cargo: that part of anchorage (a) which lies between Macao Fort and Vegetable Creek.

Vessels entering anchorage (a) in the Back Reach

will be boarded by a berthing officer, who will direct them to proper berths.

6. River and coast steamers which have determined berths are allowed to proceed to them without stoppage, except as provided for in clauses Nos. 15, 23, 24, and

26 of these regulations.
7. Vessels shall moor in accordance with instructions received from the harbor master, and shall not shift their berths without a special permit, except when outward bound after having obtained their clear-

ance papers.

8. Applications for permission to shift berth must be made at the harbor office by the master, the first officer or the pilot in charge, when the necessary instructions concerning the berth will be given. If a vessel be instructed by the harbor master to shift her berth, she shall do so.

9. A vessel mooring in the harbor after dark shall keep steam handy till her position has been verified by the berthing officer in the morning. If out of position she is at once to re-moor in accordance with the

direction of the berthing officer.

## Navigation Rules

10. Vessels are required to conform to the "International Regulations for Preventing Collisions at Sea.'

11. No vessels, whether of foreign type or native type, shall anchor in or otherwise obstruct the fairway within the anchorages and the approaches thereto.

12. Vessels under way within the anchorages or elsewhere within the river or the approaches thereto shall abstain from proceeding at a speed whereby their wash is injurious to other craft or property affoat or ashore.

13. When vessels are warping to or from mooring buoys or wharves, and when swinging at wharves, a black ball, 4 feet in diameter, must be hoisted at the



fore masthead, and no vessel shall commence to warp or swing until such black ball has been hoisted for

ten minutes.

14. (1) In the Back Reach, Central Harbor and West Reach; between the Harbor Limit at Macao Fort to the southward, a line drawn from Honam Point to the British Consular Jetty to the eastward, and the Harbor Limit at Lo Chun Creek to the westward:

(i) Six boats may be towed (two of which are to

he alongside and four astern) provided each boat towed does not exceed 70 feet in length and 15 feet in breadth.

(ii) Of boats of the "cargo boat" type, which exceed 70 feet in length and 15 feet in breadth, four may be towed (two of which are to be towed alongside and two astern).

(iii) Of the larger class of "rice junks" and "Hong-kong trading junk" not more than two may be towed.
(iv) Of the "passenger boat" type (To suen) only one may be towed, and it shall always be towed

(v) The distance from the stern of the towing vessel to the stern of the last vessel towed shall at no time exceed 200 feet, and the vessels towed astern shall be placed not more than three abreast.

(2) In the Front Reach between the Harbor Limit at Shek Chung to the eastward and a line drawn from Honam Point to the British Consular Jetty to the

westward:

(i) A vessel towing with the current shall at no time tow more than two boats and they must be towed alongside. If the vessel towed is of the large "rice junk" or "Hongkong trading junk" type not more than one shall be towed at one time, and it shall be

towed alongside.

(ii) A vessel towing against the current may tow four boats (two of which are to be alongside and two astern) provided each boat towed does not exceed 70 feet in length and 15 feet in breadth, and that the tow rope used for towing does not exceed 50 feet in length. When the boats towed are of the "cargo boat" type and exceed 70 feet in length and 15 feet in breadth not more than two shall be towed at one time. When of the large "rice junk" or "Hongkong trading junk" type not more than one shall be towed at one time.

(3) In all sections of the harbor, and at all times, the vessel towing shall be of sufficient power to have

complete command of the vessels towed.

#### Munitions

15. Vessels having on board as cargo any high explosives or the specially prepared constituents of such, any loaded shells or more than 100 pounds of gun powder, any quantity of small arm cartridges in excess of 50,000 rounds, or any other fixed ammunition of which the aggregate quantity of powder charges exceeds 100 pounds, shall berth in anchorages (b) at Whampoa or (c) at Canton, and shall fly a red flag, not less than 6 feet by 4 feet, at the foremast head. In regard to the discharge of same, they shall abide by the instructions received from the customs. having to receive on board any such explosives shall

observe similar precautions.

This rule shall not apply to the quantity of small arm cartridges when carried in a properly constructed magazine, so fitted as to admit of its being flooded by a sea cock operated from the upper deck, in which case the number of such cartridges allowed to be

carried is not limited.

16. Any transfer by boat of explosives, arms, or ammunition, must be covered by a special permit, which will be issued at the harbor office upon the owner's written application giving the registered numbers of the boats to be thus employed

17. Explosives conveyed by a lighter or cargo boat shall be effectively covered, either by being placed under deck or by means of mats or tarpaulins.

18. Every craft of whatever description, other than men-of-war, conveying explosives through any part of the waters of the port shall exhibit a red flag, not less than 6 feet by 4 feet, at the foremast head or where it can best be seen; and in case of all boats or lighters thus employed which are not fitted with masts, the flag must be exhibited at a height of not less than 12 feet above the highest part of the deck or houses.

19. A lighter or cargo boat having explosives on board in transit shall proceed directly to her destination, sanctioned by the customs authorities, and shall not anchor nor make fast anywhere within anchorages (a) at Whampoa or Canton, except at such place of

destination.

No such lighter or cargo boat shall move within these anchorages except in the daytime, and then only on a fair tide, unless propelled by engine power or towed by a tug.

20. Lighters or other boats conveying explosives from Whampoa shall proceed by the Back Reach, unless they are destined for the Government wharf in

the Front Reach.

21. No fires, for cooking or any other purpose, and no smoking shall be allowed on board any lighter or other boat when going alongside a vessel which has explosives on board, nor while there are such explosives on board such lighter or boat.

22. The storage of explosives of any sort shall not be allowed anywhere on or near either shore of the river or its affluents in the neighborhood of Canton, except with the permission of the Customs authorities.

#### Mineral Oil, Etc.

23. Vessels arriving with mineral oil, spirits of winc. turpentine, or arrack as cargo shall be berthed in anchorage (b) at Whampoa or Canton, and must remain there until all such cargo has been discharged.

Vessels loading such cargo shall do so only where

it is permitted to be discharged, and from there shall

proceed to sea.

Kerosene oil, in such limited quantities as may be approved by the Customs, may be carried within the limits of anchorage (a) at Whampoa and Canton, in properly protected cargo boats.

Bulk oil steamers are required to take all such pre-

cautions as are customary in their trade.

24. Vessels arriving with benzine, petroleum, naphtha or other high inflammables as cargo shall be berthed in

ancherage (b) at Whampoa or (c) at Canton.

25. No fires, for cooking or any other purpose, and no smoking shall be allowed on board any lighter or other boat when going alongside a vessel which has mineral oil, naphtha, benzine, etc., on board, nor while there are any such mineral oil, naphtha, benzine, etc., on board such lighter or boat.

#### Infectious Diseases

26. Vessels arriving having infectious disease on board, or any disease suspected to be infectious, and vessels any of whose crew or passengers have died of an infectious disease, or of a disease suspected to be infectious, during the voyage, shall, as provided for in the Quarantine Regulations of the port, anchor in Whampoa anchorage (c) or Canton anchorage (c).

Such vessels are, on approaching the harbor, to hoist the Quarantine Flag (letter Q), and keep it flying until pratique has been granted. No person shall be permitted to leave or board such vessel without a permit from the harbor master or the port health officer.

Vessels arriving from any port declared to be infected shall conform to the Quarantine Regulations.

#### Conservancy

27. No wharves, jetties, pontoons, or bundings shall be established, no piles shall be driven, and no reclaiming or other riparian work commenced, without the permission of the harbor master. Application for such permission should be accompanied by an adequate plan of the proposed structure and a plan showing the locality concerned.



28. No buoy shall be laid down without the sanction of the harbor master and his approval of its moorings.

29. All buoys shall be subject to the control of the harbor master: and when they are so placed as to obstruct the passage of vessels, or are not moored in such a way as to economize berthing space, the harbor master shall be at liberty to order them to be shifted. In case of refusal or neglect on the part of the owners of a buoy to shift its position as directed by the harbor master, the latter may cause it to be removed at the cost of the owners.

30. The harbor master is at liberty to periodically direct the moorings of buoys to be lifted for examination and to direct the remedying of such defects as he may consider necessary. The cost of lifting the moorings and effecting such repairs as the harbor master may consider necessary is to be defrayed by the owner

of the mooring.

31. All unoccupied buoys must be lighted by the owners from sunset to sunrise. The kind and color of

the lamp used is to be approved by the harbor master.

32. When a buoy is unccupied by a vessel of the owner thereof, it is at the discretion of the harbor master to assign the berth while not required by the owner to any vessel arriving, and no charge shall be made by the owner for such use.

33. The privileges accompanying the ownership of a buoy are not transferable by the owner thereof by sale

or lease.

34. Ballast ashes, garbage, refuse, spoil, obtained by dredging or otherwise, etc., must not be thrown into the river. Vessels wishing to discharge ashes or other refuse should hoist the International Code Flag Y at the fore truck, when a licensed ash boat will attend and take delivery free of charge.

35. In the case of wrecks within the harbor or in the approaches to the port, which form a danger to navigation, if no active steps for removal have been taken within a reasonable time, as specified by the harbor master, the wreck will be removed or destroyed by the

Marine Department of the Customs.

#### Miscellaneous

36. Arc lights and other powerful lights on wharves, pontoons, banks of the river, and on board vessels shall be so screened or shaded riverwards as to avoid embarrassment to navigators.

Search lights shall not be used in such a manner as

to embarrass navigation.

- 37. The blowing of steam whistles or sirens, except for the purpose of signalling in accordance with the "Regulations for Preventing Collisions at Sea," or for the purpose of warning vessels of danger, is strictly forbidden.
- 38. (1) In order to facilitate the loading and discharging of vessels, six cargo boats, instead of four, will be allowed abreast alongside vessels in the harbor and at the wharves.

(2) Any cargo boats over and above the six abreast,

found alongside will be fined.

- (3) In the event of a vessel wishing to leave or come alongside a wharf, cargo boats lying alongside another vessel, in such a position as to embarrass the manoeuvering of the vessel, approaching or leaving the wharf, shall immediately shift out of the way irrespective of their numbers.
- (4) These regulations are framed with the view of preventing the large number of cargo boats which at present lie abreast alongside steamers obstructing the fairway, and will be strictly enforced. If it is found that obstruction is still caused, the number of cargo boats lying abreast outside vessels will be reduced.

39. Lighters and cargo boats shall not remain alongside vessels not working cargo.

- 40. No vessels, except men-of-war, may use swinging booms. Swinging booms shall be rigged in from sunset to sunrise.
- 41. Merchant vessels shall not fire cannon or small arms within the river.



Canton Harber

42. All vessels shall keep on board a sufficient number of hands to clear and pay out chain. The hawse

must always be kept clear.

43. In case of fire occurring on board a vessel in port, the fire bell must be rung immediately by that vessel and by those above and below her, and the signal NH, International Code ("Fire: want immediate assistance"), hoisted by the burning vessel, if possible, and by those above and below her during the day, or light lowered and hoisted continually during the night. Notice should immediately be given to the harbor master's office.

44. Sampans with runners are prohibited from boardding vessels until the Customs officer is on board. Captains should assist to their utmost the harbor authorities in having this rule observed.

45. Vessels infringing these regulations will have their entrance, working and clearance stopped by the Customs until such infringement is remedied, or will be dealt with by their national authority.

#### Notice

1. Vessels allotted special numbers, under the Port Signal Code, are requested to fly the same when enter-

ing the harbor. Commanders of vessels are requested to report to the harbor master any information they may possess relating to any new dangers that they may have discovered, such as wrecks, shoals, etc., or any irregularity in the position of, or in the lights of, aids to navigation in the river.

3. Commanders of vessels having any complaints to make against a pilot should forward it in writing to the

habor master.

4. All notices pertaining to the harbor department in Canton, as well as others of interest to navigators on the coast of China, may be seen at the harbor office.

5. Commanders of vessels are advised not to navi-

rate the West Reach during night time, or the Front Reach with the tide.
6. The following are the call flags (Port Signal

Code) which are used at Canton:

Y-Ash boat wanted.

N-Berthing Officer wanted.

-Coolies wanted.

Custom officer wanted.

G-Dcctor wanted.

B—Explosives on board. NH—Fire on board.

-Quarantine. P-(Half masted) vessel clearing.

Vessels having mail matters (letters or parcels) on board should, on approaching the limit of the port, hoist the mail pennant on the fore and keep it flying till the mail officer has been on board. If a vessel has not a mail pennant on board, the International Code Flag F should be hoisted. Masters of vessels are requested to give this their special attention.

Customs Signals Hoisted on Flagstaff

(a) Ball at mast head denotes riot, etc.

(b) A blue and red, vertical stripes, pennant with National Naval ensign if man-of-war sighted.

(c) Diamond yard arm denotes ocean steamer.
(d) Flag below the symbol denotes nationality.

—Flag R, steamer from Macao.

—Flag P, at west yard arm, ocean steamer leaving, at half mast, a steamer ready to clear.

—Flag H, steamer from West River.

-Flag with white cross on blue ground, steamer from Hongkong.

Special Call Flags: See General Call for China Coast.

#### Typhoon Signals

The black signals, denoting a typhocn within 300 miles of Hongkong, are repeated at the yard arm of the Customs signal tower, Canton, and at the yard arm of the Customs signal mast on Dane's Hill, Whampoa. The Hongkong colored light signals are also exhibited, during hours of darkness, on the masts of the Canton and Whampoa Signal Stations.



Sailing Shipe in Cobu Harber-Copyrighted by Underwood & Underwood

# **CEBU** Philippine Islands

Position: Latitude 10 degrees 8 minutes north, longi-

Position: Latitude 10 degrees 8 minutes north, longitude 124 degrees 10 minutes east.

Population: 35,000.

Pilotage: Compulsory.

Port Charges: Tonnage or wharf dues, 12½ c P. I. Cy.

per net registered ton, or 35 cents per 1,000 kilos on merchandise, loaded and/or discharged at ship's option. Customs, P10 entrance and clearance fees. Light dues, nil.

Other charges, nil.

Other charges, nil.

Stevedoring: Rates for loading cargo, hemp 8 cents per bale, sugar 5 cents per ton. Rates for discharging cargo, 35 cents per ton. Overtime cost per hour, P25 per gang for 12 hours. Cost per hour for general labor, 15 cents. Lighterage, not necessary.

Accommodation: Concrete wharf 917 metres long divided into three berths of 300 metres, 376 metres and 250 metres long having a depth at low water at neap tides of 19 feet, 25 feet and 30 feet, and at spring tides 18 feet, 24 feet and 29 feet, respectively. The 300 and 367 metre berths have three-pile dolphins as fenders and 250 metre berth has a hard wood fender running the whole length. At this latter berth vessels are able to load and discharge in either monsoon. The N. E. monsoon prevails from November to June and the S. W. from July to November.

Imports: Rice, coal, petroleum and general merchandise.

Exports: Hemp, maguey, copra, sugar and tobacco.
Names of Importing and Exporting Firms: Smith, Bell
& Co., Ltd., W. F. Stevenson & Co., Ltd., Ker & Co.,
Macleod & Co., Inc., Forbes, Munn Co., Ltd., and Pacific Commercial Co.

Steamer Lines Using the Port: China Navigation Co. Ltd. plying between Hongkong and Cebu.

Consular Representation: Great Britain, Norway, A new concrete wharf 417 metres long, facing northeast and at right angles to the present wharf, is now under construction and when completed will have a depth of 20 feet at low water. This wharf will enable vessels not drawing over 20 feet to load and discharge without being drawing over 20 teet to load and discharge without being interrupted by either the N. E. or S. W. monsoons. The Visayan Refining Co., who export cocoanut oil in bulk, have a wooden wharf at Opon, Mactan Island, 325 feet long with a depth of water of 31.5 feet at low tide. Vessels of over 5,000 gross tons have loaded oil in bulk at this wharf. The loading facilities are excellent and the last vessel calling there loaded at the rate of 203 tons of oil per hour, in her deep tank.

# **CHAMPERICO**

#### Guatemala

Position: Latitude 14 degrees 17 minutes north, longitude 91 degrees 57 minutes west.

Exports. India rubber, coffee, cochineal, sugar, lead, and tobacco.

and tobacco.

Imports: General supplies.

Accommodation: It is an open roadstead, vessels anchoring in about six fathoms of water. Shipmasters should watch the shackles of the chain as the pins are liable to work out. There is a steel pier 1,182 feet long, and 22 feet wide. Steamers and other vessels discharge and load cargo by means of launches of 25 tons capacity. Railway connection with Quezaltenango.

## **CHEFOO** China

Treaty port situated in the province of Shantung, latitude 37 degrees 35 minutes 56 seconds north, longitude 124 degrees 22 minutes east. The harbor affords a safe anchorage for steamers, although strong gales sometimes rage, and impede lighter work. These storms occur in autumn and throughout the winter. Telegraph communication with Shanghai, Tientsin, Port Arthur, Weihaiwei, and Tsingtau. Chefoo has a population of 54,450 people.

Pilotage: None.



Steamers and Lighters, Chefee-Copyrighted by Unders

Accommodation: Depth of inner harbor, 18 to 30 feet, outer, 26 to 30 feet. Discharging is done by means of lighters, which unload at Customs jetty.

Port Charges: Tonnage dues, over 150 tons, 24 cents per ton; under 150, 6 cents. Cargo boats, 20 cents per ton. Ballast, 28 cents to 40 cents per ton.

Imports: Maize, tobacco, sugar, rice, cotton, paper, metals, shirtings, cotton yains, sheetings, iron, coal matches, sapanwood, kerosene oil, needles, cotton thread, natural indigo, window glass, human hair,

Exports: Waste silk, raw silk, pongees, lace, straw braid, beans, beancake, fruit, vermicelli, groundnuts, hairnets.

Consular Representation: United States (Lester Maynard, Consul), Belgium, Denmark, France, Great Britain, Italy, Japan, Netherlands, Russia, Norway, Spain, Sweden.



Crewded Waterfrent at Chemulpe
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## **CHEMULPO** Chosen

Position: Latitude 37 degrees 28 minutes north, longitude 126 degrees 35 minutes east.

Population: 30,000.

Accommodation: The largest vessels can proceed to outer anchorage in the river. Depth, outer harbor, 6 fathoms at L. W. S. T.; inner, 11 feet.

Port Charges: Harbor dues, 25 sen per ton, cover four months in any Chosen port. Rates for loading and dis-

charging, 35 sen per ton (general), rails and heavy cargo, 45 sen.

Imports: General, railway material, timber.

Exports: Rice, beans, hides.

Chemulpo is one of the most important of the treaty ports, and is situated near Seoul, the capital, and serves as its seaport.

# **CHERIBON** Island of Java, Dutch East Indies

Position: Latitude 6 degrees 48 minutes south, longitude 108 degrees 34 minutes east. Population: 23,540.

Port Charges: Anchorage dues, 16 cents per cu. metre, good for period of 6 months through D. E. I. Loading

and unloading, 40 cents per ton.

Accommodation: There is no entrance and ships anchor in roads in 3½ to 4½ fathoms all the way from 1½ to 2½ miles distant. Rise of tide, 3 to 4 feet.

Imports: General.

Exports: Sugar, tapioca, tea, teak, arak, kapok,

# **CHIN-KIANG**

China

Position: Latitude 32 degrees 13 minutes north, longitude 119 degrees 25 minutes east.

Chin-Kiang is in the province of Kiangsu, situated at the junction of the Grand Canal with the Yangszte River and was opened to foreign trade in 1861.

Pilotage: Arrangements made at Shanghai.

Accommodation: Vessels drawing 25 feet can enter harbor at any state of tide during the year. Discharging is done into hulks connected with the shore, or into cargo boats in midstream.

Imports: Raw cotton, kerosene oil, sugar, candles, wheat flour, soap.

Exports: Groundnuts, groundnut oil, beans, beancake, peas, lily flowers, sesamum seed, egg albumen and yolk.

Consular Representation: Great Britain, United States.

## CHIN-WANG-TAO China

Position: Latitude 39 degrees 55 minutes 15 seconds north, longitude 119 degrees 38 minutes east.

Accommodation: The harbor is ice free. It is pro-Accommodation: The harbor is ice free. It is protected by a breakwater 1,950 feet long with five berths up to 450 feet; pier which is 375 feet long has two berths, 330 feet and 280 feet. Depth at main berths at low water spring tide 25 feet. Harbor bottom and approaches muddy. Anchorage safe for vessels that cannot reach wharves. Three five-ton steam cranes. Direct rail contains the same cranes. nection with Tientsin, Peking, Newchwang and Mukden.

Port Charges: Chinese tonnage dues, \$0.60 per net reg. ton, same as other Chinese ports. When steamers pay at one port they do not pay again for four months. Wharfage, 80 to 120 taels; steamers, coal only, up to 300 feet, 80 taels; mixed cargoes, up to 275 feet 100 taels; over 275 feet, 120 taels, up to three days at wharf; then 40 taels for first day, and 50 per day thereafter; bunkering only free ing only, free.

Stevedoring: Vessels to railway wagons, or vice versa generally, 3 candareens per handy package or picul (133 lb.). Machinery and heavy weights up to 1 ton, 5 taels per lift; 15 tons, 100 taels.

Imports: Manufactured articles.

Exports: Coal, hides, skins, cotton, wool, seeds.

# **CHUNGKING**

Position: Latitude 29 degrees 33 minutes 56 seconds north, longitude 106 degrees 30 minutes east.

Population: 598,000.

Imports: Grey shirtings, velvets, cigarettes.

Exports: Feathers, bristles, musk wool, hides, white

Chungking is situated at the junction of the Kioling with the Yangszte, 1,400 miles from the mouth of the latter. The Yangszte is navigable beyond Chungking as far as Sui-Fu. The average rise is 75 feet.

This port is the central distributing point for virtually all of Western China, and the bulk of the imports are conveyed to their final destination by means of junks which ply the several rivers and innumerable small creeks.

One of the most extensive industries of this district is the machinery operated salt wells, the output of which compares with those in North China.

Consular Representation: United States (Paul R. Josselyn, Consul), Japan, Great Britain, France.

The products brought to Chungking for export are shipped to Ichang or Hankow, and afterward trans-shipped to Shanghai steamers.

## **COLOMBO** Island of Cevlon

Colombo, the commercial center of the Island of Ceylon, has a population of over 212,000 inhabitants, and is situated in latitude 6 degrees 65 minutes north, longitude 79 degrees 55 minutes east

The port is noted for its exportations of tea and rubber, the former product having contributed much to the fame of the island. In 1916 tea and rubber comprised 73 per cent of Cevlon's exports. Besides these industries, there has also been carried on extensive cultivation of coffee, cinnamon, cocoanut and tobacco, and at least 12,000,000 acres of land are now yielding crops of some sort. The total revenue derived from the agricultural industries amounts to more than \$35,000,000 annually.

The United States imported 25.583.891 pounds of tea from Ceylon in 1917, valued at \$5,051,242, or nearly 17,000,000 pounds more than during the year previous. Rubber importations reached 34,686,143 pounds in 1917, with a value of \$19,106,329. Cinnamon importations rose over 100 per cent, aggregating 1,922,260 pounds and having a valuation of \$254,220. There was a decline in the demand for cocoanut oils, but desiccated cocoanut increased nearly 50 per cent as compared to the figures for 1916. Graphite importations to the United States are growing steadily heavier.

There are important manufactories in Colombo which receive the products of the 2,000 mines engaged in digging such precious stones as cat's eyes, sapphires, rubies, and other valuable minerals. Among the leading native industries are a large number engaged in the work of turning out ivory, pottery, tortoise-shell, mats, fans, and woodcarving work.

The Island of Ceylon, a British colony, is situated southeast of the Indian peninsula, and has an area of 25,500 square miles, sustaining a population of more than 4,000,000 people. There are over 700 miles of railways in operation.

Pilotage: Compulsory.

Accommodation: Artificial harbor, well protected by breakwaters, and the largest vessels can be accommodated at all times of the year. All cargo is loaded and discharged into lighters. There is a graving dock 711 feet long used for naval and commercial purposes. The depth at the southwest entrance is 36 feet, and the northeast entrance, 33 feet. Cranage up to 33 tons. Patent slips for ships of 1,200 tons.

Port Charges: 121/2c per ton on all cargo loaded or discharged by vessels under 200 tons; over 200 tons, 25c.

Imports: Cotton, silk and woolen goods, oils, liquors, machinery, railway iron, hardware, specie, bullion, rice,

Tea, rubber, coffee, cinnamon, areca-nuts, cocoanut oil, plumbago, cocoa, coir, arrack, tobacco, pearls,

cardamons, copra, ebony, citronella.

Importing and Exporting Firms: Shaw Wallace & Co., H. Don Carolis & Sons, Henderson & Co., James Finlay & Co., Carson & Co. Ltd., Whittall & Co., Lee Hedges & Co. Ltd., E. B. Creasy & Co., Tarrant & Co., Clarke, Young & Co., Hayley & Kenny, Charles Mackwood & Co. Consular Representation: United States, Brazil, Chile,

Denmark, France, Japan, Mexico, Netherlands, Peru.

# COQUIMBO Chile

Position: Latitude 29 degrees 56 minutes south, longitude 71 degrees 20 minutes west.

Population: 16,000.

Pilotage: Compulsory, \$30 C. Cy. in and out for vessels of 500 to 1,000 tons.

Port Charges: Mooring and unmooring, 3 cents per ton; steamers, \$40.

Stevedoring: Rates for discharging cargo, \$3 ton, coal, including lighterage. Overtime cost per hour, \$1.50. Cost per hour for general labor, \$1.

Accommodation: Passenger and cargo moles and wharf; well sheltered; 300 tons discharged per day on lighters; anchor in 6 to 8 fathoms, 1/4 mile out; weights to 10 tons lifted.

Imports: Machinery, merchandise, coal.

Copper ore, fruits, raisins, honey, algarrobito Exports:

Steamer Lines Using the Port: P. S. N. C., C. S. A. V.

## **CORDOVOA** Alaska

Latitude 60 degrees 20 minutes north, longitude 145 degrees 20 minutes west.

Distance from Seattle, 1,236 miles.

Distance from Seattle, 1,236 miles.

Harbor: Located on Orca inlet, one of safest and deepest harbors in Alaska. Is terminus of the Copper River & Northwestern Ry. for Fairbanks and Yukon river points. Stage connection. U. S. mail.

Steamship Lines: Alaska S. S. Co., Pacific S. S. Co., make regular calls, besides independent steamers calling

wharf: One, owned and operated by C. & N. W. Ry., 730x80 feet, with modern facilities.

Population, 2,500.

## **CORINTO**

#### Nicaragua

Position: Latitude 12 degrees 30 minutes north, longitude 87 degrees 5 minutes west.

Population: 1.400, but there is an increase during the summer, owing to the exportation of coffee and fustic, at which time it reaches 4,000.

General merchandise, manufactured goods, Imports: flour, rice.

Exports: Coffee, dye-woods, sugar, skins, rubber.
Accommodation: Safest port on the Pacific side of Central America, vessels lie 100 to 200 yards from the shore.
The depth of water in the harbor, 6 to 8 fathoms. The entrance at Cardon Island is very narrow, about 120 yards in width, a pilot therefore is indispensable. The depth of water on bar is 26 feet. Government wharf, alongside which all vessels must load and discharge. Vessels load about 250 tons per day. There is accommodation for one ship only at the time, and if several vessels are in port they must wait their turn, sometimes 6 to 8 days. No ship allowed to discharge or load excepting at the wharf.

Pilotage: About 13 cents per foot, in and out.

Port Charges: Custom House duty, 10 cents per regular ton; vessels with general cargo pay 20 cents per regular ton; sealed papers and Custom House visit, \$13; commandant's fees, \$8; water duties, 50 cents. Ship broker: entrance, \$3; clearance, \$150; commission on freight, 2½ per cent.

Stevedoring: Loading, \$3 per day; discharging, \$2. Ballast, \$3 per ton. Provisions, reasonable prices. from 500 to 2,000 tons in stock.

The port is only unhealthy when rains are too heavy and frequent.

Oil Supply: A supply of fuel oil for the use of the railway, which uses oil-burning locomotives, is kept in the tank just above the head of the dock. This oil is not for general sale, but a small amount might be sold to a ship if an emergency existed.

Water Supply. There is practically no fresh water in Corinto; some is caught in tanks in the rainy season. There is no water boat.

Customs Brokers and Shipping Agents: Terminal Agency (Railroad) American concern (Ferrocarril del Pacifico de Nicaragua). F. W. Wilson, American. E. Palazio & Co., Italian. May & Griffith, English. C. L. Hinckel, English. Rodolfo d'Arbelles, French.

Names of Importing and Exporting rirms: E. Palazio & Co., Terminal Agency, F. W. Wilson, Rodolfo d'Arbelles, May & Griffith, C. I., Hinckel.



Steamer Lines Using the Port: Pacific Mail S. S. Co., Pacific Steam Navigation Co., Ward Line, Fairhaven S. S. Co., other individual companies.

Consular Representation: United States, France, Panama, Norway, Sweden, Columbia.

The vessel pays overtime for labor, customs officials, wharf officials. This overtime is also paid on Sundays and

## **CORONEL** Chile

Position: Latitude 37 degrees 1 minute south, longitude 73 degrees 11 minutes west.

Population: 3,000. Stevedoring: Rates for loading and discharging cargo, 90 cents per hour. Overtime cost per hour, \$1.50. Cost per hour for general labor, 90 cents.

Accommodation: One mole with hand crane.

General merchandise. Imports:

Exports: Coal and cereals.
Steamer Lines Using the Port: C. S. V. Co. Coast Lines.

## **DAIREN** Manchuria

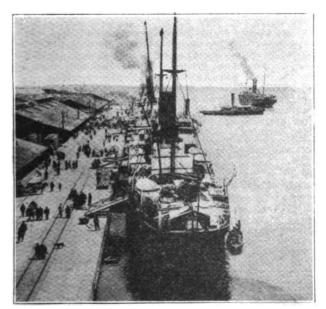
Position: Latitude 38 degrees 56 minutes north, longitude 121 degrees 40 minutes east.

Population: 91.478 (March, 31, 1918).

Pilotage: Compulsory. No charges.
Port Charges: Tonnage of wharf dues, none. Customs,
Chinese Duty Free port. I ight dues, none. Other charges:

berthing, mooring, etc.
Stevedoring: Rates for loading general cargo, 23 to 30 sen. A similar scale of rates apply to the discharging of general cargo. Overtime cost per hour: When at the request of a vessel or the owner of cargo, work is carriedon outside work hours, the extra charges will be: (a) from on outside work hours, the extra charges will be: (a) from the regular hour at which work ceases till 12 p. m., or before, 50%; (b) from 0 a. m. till the regular hour at which work commences or before, 100%. Cost per hour for general labor, 25 cents to 50 cents (U. S.) per day. Lighterage cost per short ton, 30 to 35 sen (gold). Lighterage cost per lighter per day, 5 to 20 yen (gold).

Accommodation: Depth of inner harbor at low water spring tide, 30 feet; 22 berths, of which 10 will take 25 foot draft at low water of spring tides. Total length



One of Dairen Plers

of wharves, 11,943 feet. Branch of Kawasaki Dockyard Co., with dock, for repairs. A third quay is now building which will materially increase the capacity of the port. Quays can accommodate five vessels, 6,000 to 10,000 tons, 10 over 4,000 tons, and 7 urder 7,000. Railway cars can be brought alongside of vessels. The port has stone quays, and concrete block breakwaters.

Imports: Cigarettes, cotton goods, electric materials, flour, gunnies, kerosene, leather, machinery.
Exports: Soya beans and products, coal, pig iron, wild silk and cocoons.

Names of Importing and Exporting Firms: Mitsui Bussan Kaisha; Thompson Hanram & Co., Okura Gumi; Cornabe, Eckford & Co.; Suzuki\_Shoten; Kodera Yakow.

Steamer Lines using the Port: Osaka Shosen Kaisha, Dairen-Osaka, twice-a-week; South Manchurian Railway, Shanghai, twice-a-week; Mitsui Bussan Kaisha to Seattle

(irregular); Ocean Transport to Seattle (starting).
Consular Representation: United States (Adolph Williamsen, Consul), Great Britain and Russia; Dutch Hon.
Acting Vice-Consul.

Weight ton equals 2,000 pounds (except coal, which equals 2,240 pounds or 1,680 kin). Measured ton equals 40 cubic feet; 6 Jap "koku" equals one ton. The basis is optional for charges. Labor is Chinese coolie, and can

handle 15 to 20,000 tons daily (with night work).

In 1905 the lease of the territory was transferred from Russia to Japan, and since that time the number of incoming steamers has increased to approximately 1,900 yearly. The aggregate tonnage yearly of import and ex-

port goods amounts to 1,600,000 tons.

Dairen is the capital city of the Japanese province and is served by the South Marchirian Railway, which joins the Trans-Siberian road at Chang-Chun. It lies 38 miles north of Port Arthur to which it is connected by rail.

The port of Dairen is practically ice-free the year round. It is a free port and nothing imported into the leased territory pays any customs duty. However, when goods are sent north, across the boundary at about Pulantien station on the railway the regular Chinese Customs becomes leviable. The same applies to goods brought south from the interior. As a convenience the Customs House is situated at Dairen and customs matters are generally attended to here. But goods may be landed and stored for any period without payment of duty, and storage and insurance are moderate.

The port of Dairen serves chiefly as an outlet and entrepot for the huge hinterland, and as a point on one of the routes to Russia. As the interior is in a backward state, its exports are mainly agricultural and live stock products.

## DALNY (See Dairen) Manchuria

# **DUNEDIN** New Zealand

Position: Latitude 41 degrees south, longitude 174 degrees east.

Population: 70,000.

Pilotage: Compulsory, 6d per ton net reg. covers service in and out, Id per ton removal in harbor.

Port charges: Tonnage or wharf dues, 2d per net reg. ton and 6d per ton cargo discharged. Customs, 3/per hour overtime when employed. Light dues, ½d per ton net reg. (if first port of call in New Zealand, 4d per ton). Other charges berthage 1d per ton per ton.

ton net reg. (If first port of call in New Zealand, 4d per ton). Other charges, berthage, 1d per ton net reg. per day, tally clerks 12/- per diem, 2/6 hour overtime.

Stevedoring: Rates for loading cargo, 2/6 per ton general cargo. Rates for discharging cargo, 1/8 per ton general cargo. Overtime cost per hour, 2/8 to 10 p. m. Cost per hour for general labor, 1/10d. Lighterage, cost per ton, none. Railage, Port Chalmers to Dunedin, 4/10d per ton.

Accommodation: Berthage up to 30 feet at Port Chalmers where cargo is discharged into rail truck. Upper harbor channel from Port Chalmers to Dunedin available up



to 22 feet draft. Berthage at Dunedin wharves up to 22 feet, discharged onto wharf. Two drydocks at Port Chalmers, one 500 feet by 67 feet on floor, one 300 feet by 41 feet on floor. Shear legs for heavy weights. Good engineering shops for repairs or renewals. Attendance of tug

in Upper Harbor £5 each way.

Imports: 1915, £2,542,381.

Exports: 1915, £2,016,036.

The chief manufacturing industries are: Preserved and frozen meats, lumber mills, butter and cheese factories, wood-scouring, clothing and boot factories, iron and brass

works, and gold mining.

Names of Importing and Exporting Firms: Imports, Names of Importing and Exporting Firms: Imports, Neill & Co. Ltd. (general merchandise); Sargood, Son & Ewen (soft goods); Briscoe & Co. (hardware); Exporters, Murray Roberts & Co., W. E. Reynolds & Co., A. S. Paterson & Co.

Steamer Lines Using the Port: N. Z. Shipping Co., Shaw Savill Co., Union S. S. Co., Huddart Parker Ltd., Federal Shire Houlder, Commonwealth, Dominion and Luckenbach S. S. Co.

Consular Representation: France, United States (Frederick J. Bridgeman, agent), Denmark, Italy, Netherlands, Chile, Belgium, Norway, Portugal, Argentine Republic.
The town wharves at Dunedin are situated ten miles

up the harbor from Port Chalmers and are reached by a dredged channel having a depth of 22 feet at high water, and vessels can be berthed at the town wharves on a draft of 22 feet. At the entrance of the harbor at Otago Heads there is a depth of 40 feet and vessels drawing 30 feet can berth at the Port Chalmers wharves.

# EMMAHAVEN (See Padang) Island of Sumatra, Dutch East Indies

## **ESPERANCE** Western Australia

Position: Latitude 33 degrees 53 minutes south, longi-

tude 121 degrees 52 minutes east.

Distance from Perth, 581 miles, and from Albany, 230 miles. The nearest railway connection is at Norseman, 120 miles distant.

Port Charges: Light and tonnage dues, 3d. per ton on gross tonnage.

Stevedoring: 2/6.

Accommodation: Four entrances, with depth varying from 20 to 40 fathoms. Town jetty, at outer end, with 2 outer berths, each 340 feet long, with 21 feet at low water; 2 berths, each 110 feet long with 9 feet at low water. There is a 7-ton crane at Goods shed yard.

Exports: Wool, skins, salt, fruit, dairy products.

## **EUREKA** California

Position: Latitude 40 degrees 45 minutes north, longitude 124 degrees 14 minutes west.

Population: Directory estimate, 20,000.

Tonnage or Wharf Dues: There is no charge made, if loading from wharves; otherwise \$2.50 per day. Other charges: Towage, light vessels inward bound to load lumber towed inward and outward at 50c per M. feet of lumber. Loaded vessels towed inward at 121/2c per ton of cargo.

Stevedoring. Rates for loading and discharging cargo, 80c per hour. Overtime cost per hour, \$1.20. Cost per hour for general labor, 80c. Lighterage, cost per ton, lumber 65c per M.; lumber under inspection \$1.35 per M. Lighterage, cost per day: 30-ton lighter, \$3; 40-ton lighter, \$4; over 40-ton lighter, \$5.

Imports: Groceries, supplies, general merchandise, feeds, coal, etc.

Exports: Lumber, dairy products, farm and orchard products.

Names of Importing and Exporting Firms: Hammond Lumber Co., H. H. Buhne & Co., A. Brizard Co., Inc., The Pacific Lumber Co., Holmes Eureka Lumber Co., McKay & Co.

Steamer Lines Using the Port: Pacific Steamship Co., San Francisco; Little River Steamship Co., San Francisco and Eureka. Parr-McCormick Steamship Co., San Francisco and San Pedro, Cal.

Consular Representation: None. U. S. Customs Office representative, A. L. Norton, Deputy Collector.

Charges for loading vessels with lumber for foreign ports. \$1.40 per M. feet for cross ties; \$1.60 for other classes of lumber where vessel furnishes steam, 10c per M. additional where stevedore company furnish steam. For loading vessels for U. S. ports, cost of labor, plus 10 per cent.

Water: 45c per 1,000 gallons up to 10,000 gallons; over 10,000 gallons, 22½c. Minimum, \$1.

Distances: From Columbia river, 339 miles south; from San Francisco, 216 miles north.

Harbor Master: S. S. Silkwood.

Railroad Connection: Northwestern Pacific R. R. Co.

to San Francisco and all connecting points.

Oil Dock: Standard Oil Co., depth of water 16 feet.

Humboldt Transit Co.
Steamship Lines: Pacific S. S. Co., W. E. Peacock, agent. Coggeshall S. S. Co. Various lumber companies operate vessels here at irregular periods.

Towbcat Companies: Humboldt Stevedore Co. Lighterage: Coggeshall Launch Co., Cousins Launch & Lighter Co.

Drydocks and Marine Railways: None. Rolph Shipbuilding Co., yards at Fairhaven. Hammond Lumber Co., yards at Samoa.

#### Accommodations

Docks, Piers and Wharves: Haugey's Wharf, 626 feet Docks, Piers and Wharves: Haugey's Whart, 626 feet berthing space, 12 feet water. Eureka Foundry Wharf, 2.78 feet berthing space, 12 feet water. Carson's Wharf, 2.353 feet berthing space, 18 feet water. Knight's Wharf, 400 feet berthing space, 1,500 tons capacity, 18 feet water. Northwest Pacific Wharf, 1,217 feet berthing space, 18 feet water. Excelsior Wharf, 130 feet berthing space, warehouse 2,000 tons capacity, 18 feet water. Eureka Dock 470 feet berthing space, warehouse 4,000 ing space, warehouse 2,000 tons capacity, 18 feet water. F. Eureka Dock, 470 feet berthing space, warehouse 4,000 tons capacity, 18 feet water. Stern's Wharf, 120 feet berthing space, warehouse 2,000 tons capacity, 18 feet water. Buhne's wharf, 140 feet berthing space, 18 feet water. City Wharf, 120 feet berthing space, municipally owned, 18 feet water. Pacific Coast Wharf, 180 feet berthing space, warehouse 3,000 tons capacity, 18 feet water. McKay Wharf, 250 feet berthing space, 18 feet water. Puter & Dungan Wharf, 300 feet berthing space, 18 feet water. Railroad Wharf, 362 feet berthing space, warehouse 5,000 tons capacity, 18 feet water. Stevedore Wharf, 133 feet berthing space, 16 feet water. Holmes Eureka wharf, 600 feet berthing space, 16 feet water. Standard Oil Dock, 150 feet space, 16 feet water. Standard Oil Dock, 150 feet berthing space, 16 feet water. Bucksport Wharf, 300 feet berthing space, 15 feet water. Press Wharf, 100 feet berthing space, 14 feet water.

#### Humboldt Bay and Port of Eureka Regulations, Etc.

### Pilotage

All pilots licensed or appointed for Humboldt Bay must be attached to a steamboat well furnished and fitted for the service, having the necessary hawsers and spring lines suitable to cross and tow vessels over Humboldt bar in ordinarily rough weather. Any damage to a vessel in tow of a pilot boat resulting from negligence or carelessness, may be recovered of the pilot boat, its owners, or the pilots in charge thereof at the time the injury occurred; they are jointly and severally liable therefor.

The pilot who brings any vessel into the port has priority in piloting or towing the same out, and the master of the vessel outward bound must apply for

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pilotage or towage on board the pilot boat which brought the vessel in, and tender the pilotage or towage fee. Such pilot, or a suitable substitute, must immediately render the required service, and for a failure so to do forfeits his appointment. If the pilot, in bringing the vessel in, was guilty of negligence or carelessness, he thereby forfeits his right of priority.

The following fees are collectable by the pilots of

Humboldt Bav:

1. For piloting vessels, \$8 per foot draft.

2. For towage, an amount to be agreed upon between the parties.

The master, owner or consignee of any vessel to whom any pilot may have rendered, upon request of either of them, any extra service for the preservation of such vessel while in distress, must pay such pilot, in addition to his regular fees, such amount as the commissioners determine to be a reasonable and just re-ward, if no special agreement has been made between such master, owner, or consignee of such vessel and

pilot boarding any vessel displaying a signal for a pilot is entitled to receive full pilotage.

#### Harbor Control, Port of Eureka

A harbor master of the Port of Eureka, which office is hereby created, shall be appointed by the governor of this State. He must enforce and carry into effect such rules and regulations as the board of harbor com-missioners may from time to time adopt. If any master, agent, or owner of any water craft shall refuse or neglect to obey the lawful orders or directions of the harbor master in any matter pertaining to the regulations of said harbor, such master, agent or owner so refusing or neglecting is guilty of a misdemeanor.

#### Extracts from the Rules and Regulations of the Board of Harbor Commissioners, 1902, and in Force 1918

It shall be unlawful for any vessel propelled by steam to run on Humboldt Bay, at a point between the wharf of the Eel River & Eureka Railroad Co., and Haughey's shingle mill at a greater speed than four miles an hour.

It shall be the duty of every master, owner or agent of any vessel, barge, or scow from which ballast, stone, brick, coal ashes, cinders, dust, rubbish, or other loose matter or material that will sink is being landed upon a wharf or is being transferred from such vessel, barge, or scow to another to provide and use a canvas chute or other contrivance to prevent any part of such substance from falling into the waters of Humboldt Bay.

It shall be unlawful for any vessel, barge or other water craft to lie at anchor in the stream along the Eureka waterfront between the wharf of the Eel River & Eureka Railroad Co. and Haughey's shingle mill wharf

for more than 24 hours at a time,

It shall be the duty of the master of any vessel arriving in Humboldt Bay with ballast to report to the harbor master before beginning to discharge the same.

#### Humboldt Bay Pilotage and Towage Rates

Pilotage over Humboldt bar is not compulsory. Pilotage charges are included in the towage charges, the masters of tugs being licensed pilots of same.

Towage: Light vessels inward bound to load lumber are towed both inward and out to sea, when loaded, on the basis of 50c per 1,000 feet of lumber.

Loaded vessels bound in pay at the rate of 12½c per ton, figured on the basis of cargo on board, and an additional charge of 50c per 1,000 feet of lumber is charged for taking them to sea.

For moving vessels in port the charges vary according to size of vessel, and whether loaded or light.

For light vessels the charge is from \$10 to \$25; from Red Buoy (middle of bay) to Arcata Wharf or Field's Landing the charge is from \$10 to \$40, light, according

## **EVERETT** Washington

Latitude 48 degrees north, longitude 122 degrees 10 minutes west.

Population: 36,229.

Depth of harber: Maximum, 50 fathoms. From 20 to 40 feet at wharves.

Harbor Master: Capt. W. K. Baillie.

No mooring buoys or charges.

Bonded warehouses: None.

Docks: City dock, small, capacity 500 tons; Everett
Dock & Warehouse Co. wharf, 124x475 feet; warehouses, two, 70x150 feet and 50x120 feet, capacity 800
and 500 tons, respectively; direct track connections with

Great Western Railway, track accommodates 12 cars.
Steamship lines: Pacific S. S. Co., Charles Nelson
Co., Star S. S. Co., Island Transportation Co. and
Puget Sound Navigation Cc.
Tow boat companies: Everett Tug & Barge Co.,
American Tug Boat Co., Peck Bros. Towing Co., Pa-

cific Tow Boat Co

Marine ways: Everett Marine Ways, accommodate

light draft boats only.

Oil docks: One for small craft. Railroad connections: Great Northern, Northern Pacific, Chicago, Milwaukee & St. Paul.

#### List of Charges

Towing: Standard Puget Sound rate.

Anchorage: None. Wharfage: General merchandise, 25 cents per ton. Stevedoring: 40 cents per hour, overtime 55 cents.

Storage: Good private facilities.
Cartage: 50 cents per ton general freight.
Coaling: No facilities.
Water: 25 cents to .0375 per 100 cubic feet.
Dry dock: No facilities.

Industries adjacent to shipping: Lumber, shingle, flour mills, machine works, and smaller industries. Customs representative: L. K. Boissonault.

## **FLINDERS BAY** Western Australia

This is a timber loading port, situated about 3 miles east of Cape Leeuwin Lighthouse. Rails connected with the mills, extend along the jetty making possible direct loading into vessels. Depth at inner end of jetty, 26 feet; outer end, 32 feet; length, 1,060 feet. One 3-ton crane.

# **FOOCHOW**

China

Position: Latitude 25 degrees 59 minutes 23 seconds east, longitude 119 degrees 26 minutes 39 seconds north.

Population: Estimated, 625,000.

Pilotage: Compulsory for home-going and advisable for occasional callers. Not compulsory for regular callers. Charges: All ships, between limits of outside pilotage ground \$5 foot. Pagoda anchorage to sea, and vice versa, \$6 ft. for 18 ft. and under; drawing above 18 ft. \$7 foot. Sharp Peak to Pagoda anchorage, \$3 foot, all vessels. Between Pagoda and Foochow bridge, \$2.50 per foot. Vessels in tow of steamers, inside pilotage, \$2 foot; outside, \$3 foot.

Port Charges: Tonnage dues, 4 mace (Haikwan) per register ton per quarter. Customs, night permits, week days, 6 p. m. to midnight Hk. Tls. 10, 6 p. m. to 6 a. m. Hk. Tls. 20; Sundays and holidays, double fee.

Stevedoring: Rates for loading tea, 15-16 cents per ton for home-going steamers; coasters, various as per private arrangement. Rates for discharging cargo,

various as per private arrangement. Lighterage, 20 cents per package on unclaimed cargo, other cargo taken delivery of by consignees under private arrangements. Lighterage, cost per lighter per day, \$20.

Accommodation: No dock and/or wharf accommoda-

tion. Vessels discharge and load in the stream at Pa-

goda anchorage, the port of Foochow.

Imports: Foreign—Principally yarn, piece goods, sugar, flour, kerosene, oil, coal, lead, tin; Chinese—Medicines, dry and live fish, indigo, dyed cloth, etc.

Exports: Tea, tea-brick, timber, poles, paper, bamboo shoots, oranges, olives, lacquer-ware and camphor

(small quantity).

Names of Importing and Exporting Firms: Jardine, Matheson & Co. Ltd., Butterfield & Swire; Dodwell & Co. Ltd., Westphal, King & Ramsay, Ltd., Odell & Co., Bathgate & Co., Gibb Livingston & Co., M. W. Greig & Co.

& Co.

Steamer Lines Using the Port: Regular—China Merchants S. N. Co., Osaka Shosen Kaisha, Foochow to Shanghai; Douglas S. S. Co., Ltd., Foochow, between Foochow, Amoy Swatow and Hongkong; occasional, Indo-China S. N. Co. Ltd., Ocean S. S. Co. and China Mutual, P. & O.; intermediate steamers.

Consular Representation: Great Britain, United States (Geo. C. Kanson, consul), France, Russia, Japan, Netherlands, Norway, Portugal, Mexico.

Pagoda Anchorage recognized as the "Port of

Pagoda Anchorage, recognized as the "Port of Foochow" and situated some 9-11 miles by river (according to state of tide) below and coastwise from City of Foochow, is the limit beyond which the Min river is unnavigable except for vessels of small dimensions and light draft of say 11-12 feet at high water, spring tides. At low water, neap tides, there is not sufficient water to float an ordinary launch. All oceangoing and coasting steamers have therefore to discharge and load at Pagoda Anchorage which is distant some 15 miles from Sharp Peak, the entrance to the River Min. The lower river is very narrow in parts and, as the sand banks are continually changing, requires very careful navigation. It is not advisable for heavy draft steamers to call at Foochow (Pagoda Anchorage) without first consulting agents as to the water conditions in the lower river.

#### Anchorages

Vessels from south, when waiting for the rise of tide to cross the bar of Min River, will find the best an-chorage to the southward of Breakwater rocks in 22 feet, with smaller and most northerly of the rocks in line with the summit of Matsou, and the south extreme of Tungsha in line with Yung-lui. For vessels from north, a convenient anchorage will be found in the Matsou road on the west side of the island.

#### Min-Reef Buoy

An automatic whistling buoy, chequered red and black, is moored to north-eastward of reef distant about half a mile.

The Outer Bar, south channel, is now discontinued, the entrance to the river is now via the Outer Bar, north channel.

A new channel has formed to the west of Nuitau rocks, and a black nun buoy has been laid to mark the western extremity of these rocks. The buoys marking the channel to the eastward of the Nuitau rocks are retained in their positions.

#### Tides

It is H. W. F. & C. on the bar of Min river at 10h. 27m.; spring rise 20½ feet, neaps rise 16 feet, neaps fange 10½ feet. The highest tide is on the day of full and change. The flood stream commences to run to the westward 41% hours before high water and sets in towards Sharp peak from the northeast; the ebb to the eastward 1½ hours after high water, except during freshets, when it begins earlier and runs for a much longer period, it makes out from the southwest. Morning tides are always, as a rule, higher than the night tides throughout the year.

During rainy season, April, May and June, the flood stream runs short and the ebb correspondingly longer. During heavy freshets vessels do not swing to the flood

Changes in the depth of water at Pagoda anchcrage are frequent. A large bank, drying at 9 feet, commences at Losing island just below the Pagoda extending east-ward towards Watter's rock for two-thirds of the width of the river, then curves in a northerly direction. Another bank commences to the southwest of Niuta rock. and extends southwestward towards Losing island for about a mile.

#### Customs, Harbor and Mooring Regulations

1. The port includes all that part of the River Min between the Kimpai pass and the Stone bridge across

the river at Foochow.

2. The anchorage known as the Pagoda anchorage, within the limits of which all foreign vessels (excepting those going up the river to Foochow) shall lie when loading or discharging, is that part of the river above the Lower Limit marks "L L" on either side, and be-low a straight line running west from Mamoi point to the opposite side of the river.

3. Vessels proceeding up the river to Foochow, shall

load and discharge between the Stone bridge and Messrs. Jardine, Matheson & Co.'s jetty, unless special permission is obtained from the Customs authorities to

work elsewhere.

4. Any vessels nearing the anchorage shall be stopped below the lower limit, if the harbor pilot be seen approaching, to allow him to come on board and take charge; but if such is not boarded by the harbor pilot, or by a deputy of the harbor master, the pilot on board shall moor her in a safe berth.

5. Vessels shall take up the berths assigned them by the harbor master, or by his deputy, and shall on no account change berth without first having obtained permission from the harbor master. They shall, however, shift berth if required to do so by the harbor master.

6. All vessels shall be moored taut, and shall keep

a clear hawse.

7. All vessels lying in the anchorage shall exhibit from sunset to sunrise two bright lights; one, the riding light, where it can be best seen, not less than 20 feet

above the deck, and the other at the stern.

8. A vessel arriving with a contagious or infectious disease on board, or a disease regarding the contagious or infectious nature of which there may be doubt or suspicion, or a vessel any of whose passengers or crew have died since leaving last port, or cn board which there is a corpse other than one regularly shipped as freight shall not come nearer than the lower limit of the harbor. She must fly at the fore the quarantine or plague flag (Q or L) and must allow no one to embark or to disembark without permission from the harbor master's office.

# **FREMANTLE** Western Australia

Position: Latitude 32 degrees 3 minutes 4 seconds south, longitude 115 degrees 44 minutes 23 seconds east. Population: 21,000.

This is Western Australia's chief port. The approach to the port is by the Gage Roads from the open sea. These "roads" are eight miles long and five miles wide, and lie between a long line of islands and reefs, and only open from the north entrance to the inner harbor —the shipping center—which is protected by moles, on the north 4,800 feet long, and on the south 2,040 feet. A channel of 450 feet and a length of over 3,000 feet runs between these moles into the inner harbor basin, gradually widening to about 575 feet. The basin contains about 30 feet at low water spring tide and is about 4,500 feet long and 1,400 feet wide. The wharf frontage is 9,255 feet, 7,955 feet of which carries 30 feet, 1,000



feet 22 feet to 22 feet 6 inches, and the remaining 300 feet from 16 feet 6 to the wharves, which have covering over an area of 177,000 square feet, and have been provided with the most up-to-date necessaries for the prempt loading or unloading of every class of merchandisc. Portable electric cranes are among the equipment, there being six three-ton and one ten-ton, all of them of the four-legged gantry type, the gantry permitting the passage of two loaded trains.

There is a patent slip in use at Fremantle. It is 660 feet in length, cradle 185 feet long and 26 feet wide, and depth on the blocks, high water ordinary spring tide, 10 feet 9 inches forward and 18 feet 6 inches aft, with

a lifting capacity of 850 tons.

The available wharfage at Fremantle is as follows, the figures after each being the length of berths in feet:
Victoria Quay, 5,055; North Quay, 1,875; Mail Boat
Jetty, 400; Mail Boat Jetty, 500; North Mole Wharf,
1,005; South Mole Wharf, 303.
Pilotage: Compulsory. Interstate vessels exempted;

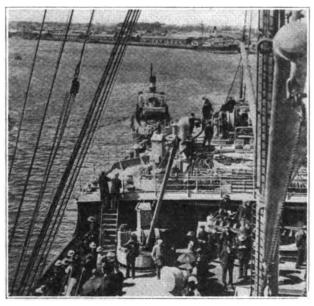
4d. per reg. ton in and out. Maximum. £25, plus present

20% war sur tax; £30 in all for a full-powered steamer.
Port Charges: Light dues, on steamers landing and/ or shipping cargo exceeding one-fourth of the net reg. tonnage, 2d. per ton, plus 20%. Where cargo handled is less than one-fourth of the vessels tonnage, ½d. per ton, plus 20%. Vessels bunkering only, £ 3. Berthage, 1-24d. per ton gross reg. per hour, plus 20%. Bunkering only, 50% rebate of port dues only.

Stevedoring: Similiar to those charged at other Au-

stralian ports.

United States Consul: Udolpho W. Burke.



Fremantie Harber-Copyrighted by Underwood & Underwood

# **FUSAN** Chosen

Fusan is a treaty port in the southeastern part of Chosen.

Population: 61,309.

Population: 61,309.

Accommodation: 6 to 8 fathoms depth at east entrance; 3 to 4 fathoms at west entrance; 3½ to 9 fathoms at berth; 27 to 36 feet at quays. There are two piers, one 912 feet and another 1,200 feet. These piers are connected with the railway. There is an old pier 606 feet in length.
Port charges: Harbor dues, 25c per ton reg., covers

four months. Loading and discharging, 50 to 75 cents

Imports: General. Exports: Beans, rice, hides.



Strect Scene in Fusan-Copyrighted by Underwood & Underwood

# GLADSTONE (Port Curtis) Queensland, Australia

Position: Latitude 23 degrees 52 minutes south, longi-

Port Charges: Wharf charges, 6d. each for horses and cattle; other goods 2/- per ton. See Brisbane for additional charges.

# **GRAYS HARBOR** Washington

Commercial docks at Aberdeen, two, the Harbor Dock and that of The Aberdeen Dock & Warehouse Co. Wharfand that of The Aberdeen Dock & Warehouse Co. Wharfage charges at Aberdeen 40 cents per ton, minimum of 25 cents. The Aberdeen Dock & Warehouse Co. is the only company having rail connections to warehouses and storage. They are agents for the following companies: Pollard S. S. Co., Wilson Bros. S. S. Co., J. R., Hanify Co., and E. K. Wood Co., all of San Francisco. The Harbor Dock Co. represents Sudden & Christenson, of San Francisco.

Hoquiam has two docks, the Commercial Dock, owned and operated by T. G. Foster Co., and the City, or Eighth Street Dock, which is leased and operated by the Soule Tug Boat Co. The latter is the only one in Hoquiam doing a general storage business. There are no bonded warehouses on Gray's Harbor.

Jetties: North and south. Vessels approaching first pick up whistling buoy before entering. Bar is 1½ miles to seaward of jetties. Controlling depth of water on bar at mean low water, 21 feet; at high water, 30 feet. Bar entrance is straight, and one-half mile wide.

Inner Harbor: Controlling depth at mean or low water is 18 feet. There is about a 10-foot rise at tide. Latitude of entrance to harbor is 46 degrees 55 minutes north, longitude 124 degrees 8 minutes west.

Government officials on Grays Harbor: Deputy Collector of U. S. Customs, U. S. Immigration Inspector, U. S. Court Commissioner, U. S. Engineer in charge of jetty work, Postmaster.

Railroads serving Grays Harbor: Northern Pacific, Chicago, Milwaukee & St. Paul; Oregon-Washington Railroad & Navigation Co.

#### Grays Harbor Pilotage and Towage Rates

Towage rates at Grays Harbor on vessels up to 800 tons are 50 cents per gross register ton, which includes towage in and out over the bar and docking at one dock within the harbor.

For moving from dock to dock a special charge will be made, depending upon the distance moved and whether or not the vessel is loaded, varying from \$10 to \$30.



Pilotage

For piloting steamers over 800 tons to or from Hoquiam or Aberdeen over the bar or from within the bar to the open sea the rate is \$5 per foot draft and 2 cents per ton gross register each way.

Steam vessels over 700 tons and under 800 tons, in and

out, \$100

# **GUAYAQUIL Ecuador**

Position: Latitude 2 degrees 13 minutes south, longitude 79 degrees 35 minutes west.

Population: 80,000. Pilotage: Compulsory.

Imports: General merchandise, drugs, foodstuffs, mach-

Exports: Cocoa, Panama hats, rubbers, coffee.

Guayaquil, the chief port of Ecuador, is situated 30 miles from the mouth of the Guayas river. Distance from San Francisco, 3,514 miles. Vessels are required to call at anchorage at Puna Island, where coast guardmen and pilot come aboard. At Guayaquil vessels call at Government wharf, where port captain, coast guard and physician come aboard. All discharging by means of lighters.

#### Port Charges

Cost per hour for general labor, 30 centavos; double for overtime and holidays; also found. Lighterage included in lading and discharging rates. Lighters cost per day, \$20. For overtime work, charges are as follows: Chief of lighterage department, 02 per hour; captain of the launches, \$1 per hour, and the stevedores, 60c per hour. This is paid for all work after 6 p. m., also on Sundays

and holidays.

Art. 80. Ships entering Ecuadorian ports shall pay 10 centavos for each lighthouse found in the ports they enter, on every ton, weight or measure, of merchandise dis-

charged.

Art. 81. National ships, foreign warships and whaling ships, and such vessels as may arrive damaged and in



Loading Cocoa Beans on a Steamer at Guayaquil Copyrighted by Underwood & Underwood

distress shall all be exempt from the above-mentioned clause, if they do not discharge any merchandise.

Art. 82. No ship entering from the exterior of more than 30 tons register, shall enter or leave the River of Guayaquil without a pilot; and any ship so doing shall pay the corresponding dues to the Island of Puna.

National ships shall be exempt from this disposition, and shall pay it only when they request the services of

Art. 83. The pilot's fee shall be paid by the ships when entering or departing; and shall be paid on a basis of each foot (English) of draft, in conformity with the following tariff:

From Puna to Guayaquil and vice versa, per foot, S/2.50; from Punta Arenas to Guayaquil, per foot, S/3.50; from Santa Clara to Guayaquil, per foot, S/5.00; to go alongside or leave a wharf, and removals, S/5.00; to removal from Guayaquil to Duran, S/10.00. Warships are exempt from these charges.

Art. 84. As a subsidy for the Sanitation Commission, S/5.00 shall be collected from each ship, whether national or foreign, entering from the exterior, and for each roll that is issued. Vessels of less than 30 tons register and the national coasting vessels are exempt.

Art. 85. All national ships or those which may become of 10 to 20 tons, S/1.00; of 21 to 50 tons, S/2.00; of 51 to 100 tons, S/5.00 of 101 to 200 tons, S/10.00; of 201 to 300 tons, S/15.00; of 301 tons upwards, S/20.00.

For the recording of the register, the owner or captain shall pay, as follows:

Of 10½ to 50 tons. S/6.00; of 50½ tons upwards. S/12.00.

Vessels of 10 tons, river steamers, freight launches, sloops, and freight boats, and freight canoes are exempt from the register charges. They shall fulfill the legal requisites and the register shall be granted on fourth class paper.

Art. 86. Owners of vessels, or their representatives, shall pay once only for measure or tonnage, according to the following tariff:

Up to 2 tons, S/1.00; from 2½ tons to 5, S/2.00; from 5½ tons to 10, S/3.00; from 10½ tons to 20, S/4.00; from 20½ tons to 30, S/6.00; from 30½ tons to 40, S/8.00; from 40½ tons to 50, S/10.00; for every succeeding ten tons or fraction, S/1.00.

Art. 87. The quotas of the beneficiaries of the income from importation and exportation charges shall be assigned in the National Budget for Expenditures in fixed and determinate quantities, which shall be delivered monthly and proportionately by the respective Treasurers of the Provinces under their responsibility.

Art. 88. All laws relating to the present law and even though they are not contrary are hereby repealed.

Stevedoring: Cost per hour for general labor, 30 centavos per hour; 60 centavos per hour for overtime and holidays, also found. Lighterage, cost per ton, included in loading and discharging rates. Lighterage, cost per lighter per day, S/20.

Accommodation: Coal laden vessels only go to wharf owned by Gas Co. Vessels drawing 26 feet have entered. All others anchor in stream.

Names of Importing and Exporting Firms: Exporting—Andean Trading Co., Mercantile Oversea Corporation, both American, L. & D. Vernaza, Importing—Gonzalez-Rubio & Co., L. Tous & Co., Mercantile Oversea Cor-

Steamer Lines Using the Port: Pacific Steam Navigation Co., Merchants Line, Ward Line, Nautilus Steamship Co., Johnson Line, Peruvian Steamship Co., Colombia Mari-

Consular representation: United States, Great Britain, France, Germany, Sweden, Norway, Denmark, Switzerland, Spain, Russia, China, Holland, Belgium, Turkey, Italy, Austria-Hungary, Santo Domingo, Mexico and Central American Republics except Honduras and all South American Republics ican Republics except Paraguay.

# HAIPHONG Indo-China

Position: Latitude 20 degrees 51 minutes north.

longitude 106 degrees 42 minutes east.

Population: About 48,000 including 1800 Europeans.

Population: About 48,000 including 1800 Europeans. Pilotage: Compulsory, francs 0.18 per ton. Port Charges: Tonnage or wharf dues, \$20 a day. Sanitary fees, \$10 a trip. Light dues, none. Other charges, tax de piage, \$0.02 per ton net.

Stevedoring: Rates for loading cargo, general, \$0.50

and \$1 per ton. Rates for discharging cargo, general, \$0.52 per ton; rice, maize, \$0.25 per ton. Overtime cost per hour, double tariff. Cost per hour for general labor, 3 f. per hour. Lighterage, cost per ton, \$0.80 general cargo; \$.30 rice and maize. Lighterage, cost per lighter per day, \$40 for 100-ton lighter.

Accommodation: The port of Haiphong has fine wharves, 1,800 feet long, with sufficient accommodation for four big vessels. The draft of water available at neap tides is 24 feet and 28 feet at spring tides. There is a slip dock for 2,000-ton vessels. Along the wharves have sprung some large godowns known as "Docks of the Chamber of Commerce," which can hold 40,000 tons.

Import: Piece goods, wines, gunnies, grocery.

silks, etc.,

Exports: Rice, maize, zinc ore, skins, buffalo hides.

Names of Importing and Exporting Firms: Compagnie des Commerce et de Navigation d'Extreme Orient, Denis Freres, l'Union Commerciale Indo-Chinoise, Societe Française Commerciale de l'Indo, Chine, Berthet, Charriere & Co., Poinsard et Veyret.

Steamer Lines Using the Port: Compagnie des Messageries Maritimes, trading with Europe; Chargeurs Reunis, trading with Europe; Indo-China Steam Navi-

consular Representation: Japan, by Mr. A. Gigueaux, manager Messrs. Denis Freres; Mr. Rogue, Vice Consul of Russia; Mr. Goubier, Consul of Belgium.

Haiphong is the shipping port for Hanoi, Hai-Duong, Nam-Dink, the commercial centres of Tonquin. The entrance of the port is no longer obstructed by the bar, since it was dredged up and the big mail steamers of the Messageries Maritimes now frequent Haiphong regularly. Haiphong is also the shipping port for goods traveling to Yunnan whence they are forwarded by railwav.

## **HAKODATE**

#### Japan

Position: Latitude 41 degrees 47 minutes 8 seconds north, longitude 140 degrees 45 minutes 34 seconds east. Population: 100,800.

Pilotage: Not compulsory. Charges, \$5 per vessel. Port charges: Harbor dues, 5 sen per net. reg. ton Dock tariff, under 1,000 tons gross, by special arrangement; docking, 1,000 to 3,000 tons gross, 26 sen per ton gross for first two days, then 6 sen per ton per day; over 3,000 tons gross, 25 sen per ton gross for first two days, then 5 sen per ton per day. Ballast 75 to 80 sen per ton f. o. b.

Stevedoring: Loading and discharging, 60 sen per

Accommodation: Slipways up to 1,200 tons and also dry dock, owned by Hakodate Dock Co. 100-ton crane and 1,200-ton patent slip. Depth at entrance of harbor, 52 feet; at berth, 24 to 42 feet; at quay, 28 feet.

Imports: Rice, kerosene.

Exports: Dried fish, cuttlefish, sharks' fin, salmon, cod, herrings, fish manure, sulphur, manganese, kombu (seaweed), trepang, haliotis.

Hakodate, on Tsugaru Strait, in Yezo, has only a small foreign trade. This large island, though said to

have 25 per cent of its surface fit for agriculture, has a severe climate, and at present has only a scanty popula-tion on the coast, chiefly engaged in fishing (salmon, herring, cod), though there is now also a mining population. The island is now officially known as the Hokkaido, or Northern Colony, and the Japanese govern-ment is endeavoring to develop its resources.

# **HANKOW**

Position: Latitude 30 degrees 32 minutes north, longitude 114 degrees 20 minutes east.

Population: Including Wuchang and Hanyang, 1,326,280; (foreigners, over 2,000).

Pilotage: Not compulsory.

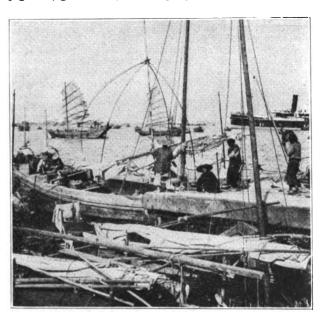
Port Charges: Tonnage or wharf dues, 4 Haikwan mace per ton. Customs, import and export duty various rates but maximum 5 per cent. Light dues, included in tonnage dues. Other charges, British municipality fees, Tls. 50 per vessel using berth alongside British bund.

Stevedoring: Rates for loading and discharging cargo, about 6 cands per ton. Lighterage, cost per ton, 40 cands. Lighterage, cost per lighter per day, Tls. 30 (400 ton boat).

Accommodation: Regular river steamers have own pontoons. A. Holt & Co. have a pontoon capable of accommodation for their large ocean ships; this berth in British Concession, very handy, sometimes used by "outside" ships. Terms on application. In winter water in river channels east of Hankow often under 10 feet, impossible for anything but river steamers to reach here. In summer river is up to 40 to 45 feet and on average there is water for any sized ocean ship to reach Hankow between end of April and end of October.

Piece goods, cotton yarn, machinery, Imports: matches, kerosene, sandalwood, medicines, cuttlefish, cement, aniline dyes and artificial indigo, needles, timber, tea-dust, sugar, and general foreign goods.

Exports: Skins, hides, steel, iron, cotton beancake, peas, seeds, egg products, wood, wood oil, bean oil, tallow, bristles, gallnuts, raw silk, raw cotton, rhubarb, tobacco, varnish, coal, coke, charcoal, hemp, wool, jute, pig iron, goat skins, and large quantities of tea.



Hankew Harber Seene-Copyrighted by Underwood & Underwood

Names of Importing and Exporting Firms: Jardine, Matheson & Co. Ltd., Dodwell & Co. Ltd., H. E. Arnhold, Deddes & Co., Westphal, King & Ramsay Ltd.,

Steamer Lines Using the Port: Indo-China S. N. Co. Ltd., China Navigation Co. Ltd. These British lines have services throughout the Yangszte river and all China coast ports, with their cwn respective steamers and agencies. Other river lines: Nisshin Kisen Kaisha (Japanese), China Merchants Co. (Chinese).

Consular Representation: Great Britain, France, Russia, Italy, Belgium, Japan, Spain, United States, (Edwin S. Cunningham, consul general), Denmark, Sweden, Norway, Holland.

Hankow situated at junction of Han and Yangszte rivers. Across the Han is Hanyang, containing extensive iron and steel work and government arsenals. Across the Yangszte is Wuchang, capital of the province, containing smelting works, mint, cotton mills, Hankow is connected with Peking and North China by railway and when present railway construction southwards is completed, Hankow will be at the intersection of a cross formed by the River Yangszte from cast to west and the Peking-Hankow Hankow-Canton railways from north to south. It is therefore difficult to set any moderate limit to its future possibilities of development. Hankow was opened as a treaty port in 1861 and has always been an important trade center. In the past dozen years very considerable development has taken place and much more is at present in evidence.

## HILO Hawaiian Islands

Latitude 19 degrees 43 minutes 47 seconds north, longitude 155 degrees 5 minutes 18 seconds west.

Population: About 10,000.

Harbor Master and Pilot, Capt. Ferdinand Mosher. Hilo is second in importance of ports in the Territory of Hawaii. It is situated on the east coast of the Island of Hawaii, largest of the Hawaiian group, about 200 miles south east of Honolulu and about 100 miles south, 41 degrees east from Kahului, Maui.

The harbor is protected by a breakwater. There is an open roadstead. The range of tide is 2.3 feet. The breakwater extends from a point on shore about 6.000 feet east of Cocoanut Island, so as to include Kuhio Bay in the protected area, and is now being projected by the United States Government to an estimated distance of 8,000 feet.

Since the government began its improvement of Hilo Harbor, the Territory of Hawaii has constructed a wharf at the head of Kuhio Bay, a tributary of Hilo Bay, at a cost of \$319,931.17. The minimum depth in Kuhio Bay at mean lower low water is now 33 feet.

Kuhio Bay wharf is the principal and only modern pier structure at the Port of Hilo. The wharf proper occupies a space 1,400 feet long and 150 feet wide. A wooden shed 800 by 146 feet stands over the wharf, providing a space of 25,000 square feet for the storage of sugar, and the balance for the loading and discharge of general cargoes.

Since the completion of Kuhio wharf trouble has been experienced at times because of currents and swells, chiefly during the season of storms, from December to April. Some of the large liners refuse to lie at the wharf owing to this ranging, and anchor out in the bay, taking cargo aboard and discharging by means of lighters. Completion of the breakwater extension may end the trouble by shutting off the current. In other instances, steamers and lumber schooners have used the wharf without experiencing any trouble from ranging whatever. In fair weather the wharf is generally safe as a berth for vessels.

Byron K. Baird is deputy collector of customs and

U. S. immigration inspector at Hilo.

#### **HOBART**

#### Tasmania, Australia

Position: Latitude 42 degrees 53 minutes 22 seconds south, longitude 147 degrees 20 minutes 28 seconds

Hobart, the capital of Tasmania, lies on the River Derwent. It is recognized as a very fine harbor, and has regular sailings of several prominent steamship lines to Australia, American and European ports. It is 36 hours by steam from Melbourne, and 48 hours from Sydney. Excellent wharfage facilities have been recently installed with a water depth of 20 to 60 feet, the average being 34 feet. There is two miles of wharf frontage, with shed area of 100,000 square feet.

Population: 50,000.

Port Charges: Quayage, 1/2d per ton, max. £25. Harbor dues (when no quayage payable) ½d per ton. max. £7-10-0. Light dues, 8d per ton. max. £150 covering all ports of the Commonwealth for three months: 4d per ton, max. £75, one port of call only in Com-Berthage, 11/2d per ton net reg.; maximonwealth. mum £37/10/-.

Stevedoring: Rates for loading cargo, fruit, 2/51/2 to 31/2 per ton, timber as per arrangement; general 1/6 to 3/1 per ton. Rates for discharging cargo, 2/4 to 3/3 per ton. Overtime cost per hour, 10½ per man. Cost per hour for general labor, 1/9. Lighterage not reauired.

Accommodation: Good accommodations for oversea vessels, with depth of water at piers from 30 to 60 feet. Ocean pier, north side 650 feet; south side 1142 feet; width 122 feet; depth of water, both sides, from 36 feet at inner end to 60 feet at outer end. Princes wharf, at inner end to 60 feet at outer end. Princes wharf, length 1292 feet, depth of water from 30 feet to 44 feet. Queens pier, length 559 feet, depth of water 32 feet inner end to 40 feet outer end. Kings pier, length 688 feet, depth of water 34 feet inner end to 45 feet outer end. Five smaller piers. The above depths are at end. Five smaller piers. The above depths are at L. W. O. S. T. Difference between neap and spring tides is 1 foot. The deepest drafted ship in the world can negotiate the river.

Imports: Valued at \$5,000,000 per annum for Tas-

Exports: Valued at \$3,000,000 per annum for Tasmania, mostly from Hobart.

Names of Importing and Exporting Firms: A. G. Webster & Sons Ltd., H. Jones & Co. Ltd., Brownell Bros., R. Nettleford, Burgess Bros., G. P. Fitzgerald & Co.

Steamer Lines Using the Port: Huddard, Parker Ltd., Australian ports; Union S. S. Company of New Zealand, Australian and Pacific ports; Shaw Savill of London, Capetown, Hobart, New Zealand ports, thence London.

Consular Representation: Brazil, France, Russia, Italy, Denmark, Norway, Holland, Belgium, United States, Sweden and Argentine.

Principal Imports: Clothing and materials, iron and steel goods and machinery, paper, books and stationery, sugar, spirits, wine and beer.

Principal Exports: Wool, frozen meat, gold (exclusive of specie), butter and cheese, hides, skins and leather.

#### General Port Regulations

No vessel shall land or load any cargo at any wharf except at a berth approved by the harbor master.

2. No vessel shall have a right to a berth in the port for any longer period than shall be determined by the harbor master, and every vessel may be re-moved from one berth to another or to any anchor-age within the port by direction of the harbor master at the expense of such vessel.

3. So far as practicable, the harbor master shall give priority in allotting berths to vessels discharg-

ing cargo over vessels taking in cargo.



- 4. Cargo shall be placed on the wharves so as to keep the mooring posts clear, and leave proper gangways for the handling of other cargo, to the satisfaction of the harbor master.
- 5. The cargo of, or for any vessel, whether inward or outward, shall not occupy (without the written permission of the harbor master) a greater space on any wharf than the length of the berth appointed for such vessel.
- 6. No cargo for export shall be placed upon any wharf without the permission of the harbor master, who may give such permission if satisfied that the vessel for which such cargo is intended may be expected to arrive within five days.
- (6a. All cargo placed upon any wharf or in any shed belonging to the board shall be so placed and stacked in such mannner as may be directed by the harbor master or the wharf officer, and all persons engaged in the depositing, stacking sorting or removal of any cargo at, upon, in, or from any wharf or shed shall obey the orders of the harbor master and the wharf officer with regard to the same.)
- 7. No master shall remove his vessel from any wharf until the berth or space occupied or used by such vessel has been cleared of rubbish and swept clean.
- 8. The owner of any cargo (not being timber or other bulky articles) which has been left on any wharf for the space of 48 hours shall remove the same forthwith from such wharf upon notice in writing from the harbor master so to do, served upon such owner, or delivered at his office or residence, or, if such owner cannot be ascertained or found, affixed to such cargo. If not removed according to notice, the harbor master may cause such cargo to be removed and stored at the risk and cost of the owner, and if not claimed within ten days, then (or sooner if the cargo be perishable) may cause the same to be sold on behalf of the owner; and the net proceeds of sale shall be retained by the board for the owner, but if not claimed

within six months from the time of sale, shall become the property of the board.

Penalty for non-removal of such cargo: Five Pounds for every day or portion of a day after such notice has been given or affixed.

- 9. The places appointed by the board under Section 77 of the act for the deposit of pondercus matter are any part of a wharf (but not of a pier), at a distance of not less than 20 feet from the water's edge thereof, and any place alongside a dock not less than 15 feet from the nearest water's edge thereof. Ponderous matter may be deposited on a pier with the permission of the harbor master.
- 10. No heavy cargo (not being ponderous matter) shall be placed upon any wharf without the permission of the harbor master, and no such cargo shall be placed on any wharf at a less distance than 20 feet from the water's edge thereof, or if placed alongside any dock, at a less distance than 15 feet from the nearest water's edge.
- 11. No cargo landed by any crane shall remain within the radius of the crane, or remain on any wharf for more than 12 hours after being landed, unless with the written consent of the harbor master.
- 12. No vessel shall be careened or hove down in the River Derwent above a line drawn from Sandy bay point to Kangaroo Bluff without the written consent of the harbor master.
- 13. The board shal not be answerable for loss of or damage to any cargo on any wharf, from whatever cause arising.
- 14. No person shall send, or attempt to send, in any vessel (except from or to Sullivan's cove to or from some point between Kangaroo Bluff and the southern point of Geilston bay, or across the Restdown ferry) any motor driven vehicle or boat using petroleum fuel unless the tanks thereof are empty and free frompetroleum vapors, and the drain and filling pipes of such tanks are left open and the openings effectively protected by fine wire gauze.



Bird's-eye View of Hebart Waterfront -Copyrighted by Underwood & Underwood

- 15. No vessel shall (except in case of necessity) be moored or unmoored, or drop or weigh anchor at any berth or place within the port above a line drawn from Sandy bay point to Kangaroo Bluff, except under the direction or by the permission of the harbor master, which permission may be given generally with regard to vessels engaged in such trades as the harbor master may deem proper.
- 16. Ballast may be discharged from any vessel in not less than 10 fathoms of water at the places and within the limits hereunder mentioned if notice in writing be first given to the harbor master or to the ballast master for the place of discharge, and if upon the discharge of such ballast a certificate from such ballast master or (if none) from the nearest police authority, or a justice of the peace, or some other respectable resident in the vicinity, that such ballast has been so discharged be forwarded forthwith to the harbor master.

#### Pilotage

1. The pilotage rates payable by vessels entering, leaving, or proceeding from one place to another within the port shall be as follows:

Inwards—Sailing vessels, per ton, 6d; steamships, per ton, 4d. (The maximum rate payable in either case shall be £15, and the minimum £4.)

Outwards-One-half the above rates, with a maximum payment of £5.

Within the port generally—Sailing vessels, per ton, 3d; steamships, per ton, 2d. (Maximum rate in either case, £5.)

Within the port, above a line drawn from Trywork point to Sandy bay point, or within any Outport (as defined by a resolution of the board)—Vessels of 200 tons and under, 10s; vessels over 200 tons and up to 1000 tons, £1; vessels over 1000 tons, £2,

- Vessels under 50 tons are liable to the above rates only if a pilot is actually employed.
- 3. Vessels which have paid pilotage and re-enter the port, solely through accident or to effect repairs, shall pay pilotage rates again when a pilot is actually employed.
- 4. The rate of pilotage within the port is not payable by a vessel entering the port until after the inward pilotage has been first completed.
- 5. If the pilotage rate within the port has once been paid by any vessel which afterwards proceeds in the course of the same voyage to any other place within the port, one-half of the rate above fixed shall be payable on each occasion, with a maximum of two pounds ten shillings.
- 6. When a pilot is detained on board a vessel in quarantine, or by any act of the master, fifteen shillings per diem shall be payable by such vessel in addition to the pilotage rate.
- 7. A pilotage exemption certificate shall be granted to any holder of a master's certificate who has entered the port, when employed on a vessel as master or first or only mate, three times as master or six times as mate (two voyages as mate to count in any case as equal to one voyage as master), and who has satisfied the harbor master upon examination of his competency to navigate vessels into and out of the port, and has before examination paid to the board a fee of five pounds. Certificates of exemption shall apply to vessels of any size (whether steamships or sailing vessels). Certificates of exemption heretofore issued shall be deemed to have been issued under this by-law.
- 8. A vessel requiring the services of a pilot must make the usual signals.
- 9. The distinguishing flag to be kept flying under Section 109 of the act upon a vessel whose master claims to be exempt from pilotage shall be a white flag at the fore mast head, two yards square at the least.

#### Port Charges

Every vessel (not exempt by the act) which shall arrive within the port shall pay upon arrival the sum of one half-penny per ton, with a maximum of seven pounds ten shillings.

A vessel which re-enters the port solely through accident or to effect repairs shall not be liable to pay

the port charge again.

## **HOIHOW**

#### China

(See Kiung Chow.)

Position: Latitude 20 degrees 3 minutes north. longitude 110 degrees east. Population: 30,000.

Hoihow serves as the port of call for Hainan Straits. and is the seaport of Kiung Chow. There is anchorage in 18 to 20 feet.

Port Charges: Tonnage dues, 1 mace per ton net for steamers 150 tons and under; over 150 tons, 4 mace.

# **HONGKONG**

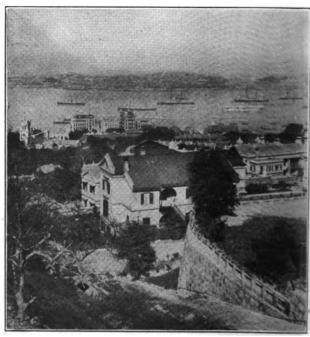
Hongkong is situated in latitude 22 degrees 14 minutes north, longitude 114 degrees 10 minutes east. The total civil population, estimated in 1916, was 529,010, consisting of 13,390 non-Chinese and 515,620 Chinese. Properly speaking, the name of Hongkong is used in connection with the island of that name, the seaport being Victoria; in maritime circles, however, the word Victoria is seldom used, and the name of the island is usually applied to the town of Victoria itself.

The island is situated off the coast of the Kwang-

The island is situated off the coast of the Kwangtung Province of South China, near the mouth of the Canton River, and is 90 miles from Canton, and about 40 miles from the Portuguese colony of Macao, on the mainland of China. The hot season begins in May and continues until October. The winter months

are cool and dry.

The Island of Hongkong has been in possession of the British since 1840, and in the comparatively brief period which has elapsed since that date, it has risen to the importance of being the chief seaport in the



Section of Honkong, Overlooking the Harbor
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View of Hongkong Harbor-Copyrighted by Underwood & Underwood

Orient, and only a year or two ago, from the point of tonnage passing through the port, was the chief port of the world. It is aptly described as the "Charing Cross" of the Orient. It is a British Crown colony, and has a governor and legislative body administering its affairs. The currency is in bank notes, government dollars, and subsidiary coinage of various denominations.

The harbor at Hongkong is one of the finest in the world, situated as it is quite close to the Kowloon Peninsula, the high hills of the island itself on the one side and the hills of the mainland on the other, in conjunction with the shelter afforded by the many bays, both cn the mainland and on the island, make it an ideal place for the loading and discharging of craft of all descriptions.

In its early history the governors of the island decided that its close proximity to the mainland rendered it unsafe for British interests, and a treaty was subsequently arranged with China, whereby Great Britain obtained a 99-year lease of a large portion of the mainland opposite the island, by this means securing additional protection against possible depredations of marauding tribes, which even the Mandarin government in China could not subdue.

Very much has been said of the numerous natural facilities afforded by the formation of the island in juxtaposition to the Peninsula of Kowloon. The authorities have ranged mooring buoys in regular sequence on each side of the fairways through the harbor, while the mercantile companies on shore have provided most excellent wharves for the accommodation of vessels and warehouses for the reception of goods. Details of buoy charges and accommodations are contained in the particulars of the port immediately following this.

There is a large number of lighters available for working ships that discharge in the stream, and with good weather prevailing and no scarcity of lighters this is possibly the quickest way of loading and discharging vessels.

#### Port Charges

The port is a free one, no duty being charged on imports, except with respect to tobacco, wine and spirits,

which for some years have contributed to the revenue of the colony. With no restrictions upon trade and every facility in the way of handling ships and cargo quickly, it is not surprising that this center has grown to the importance it has reached in the world's commerce. As a distributing center it is unrivaled, a reference to the list of the various steamship companies trading to and from the port demonstrating this to the most casual observer.

Being a free port, there is no complete official returns of the imports and exports compiled, although an attempt is now being made to establish records. In normal times the value of the trade of Hongkong is estimated at about 50,000,000 pounds yearly. In spite of the effects of the war, the total of shipping entering and clearing the port during 1917 amounted to 621,090 vessels of 34,105,067 tons.

Pilotage: Not compulsory. Inward, \$15.00 Mexican outside harbor limits; \$10.00 inside harbor limits, in or out. Shifting, \$5.00.

Port Charges: Tonnage or wharf dues, none. Customs, none, except on tobacco and spirits. Light dues, 2c Mexican per net registered ton for each call. Sunday permits, steamers n. r. 400 to 700 tons, \$100.00; 700 to 1000 tons, \$125.00; 1000 to 1500 tons, \$150.00; 1500 to 2000 tons, \$175.00.

Stevedoring: Rates for loading cargo, general, 10c per ton. Rates for discharging cargo, general, 10c per ton. Cost per day for general labor, about 40c per head. Lighterage, cost per ton, \$14 per day for 50-ton lighter.

Accommodation: All buoys are government property and are hired out on the following terms: A class \$8 per day or part of a day; B class, \$6 per day or part of a day; C class, \$4 per day or part of a day; vessels over 300 feet are not allowed to use "C" class buoys; over 3,000 feet of wharfage, godowns in connection. Butterfield & Swire have a large modern dockyard and shipbuilding works in full operation.

Consular Representation: Belgium, Brazil, Chile, Bolivia, Denmark, Ecuador, France, Guatemala, Italy, Japan, Mexico, Netherlands, Nicaragua, Norway, Panama, Peru, Portugal, Russia, Siam, Spain, Sweden, United States (George E. Anderson, consul general).

#### Steamers Using the Port and Their Trade Ports

Communication from Hongkong to such ccastal ports as Canton, Swatow, Amoy, Foochow, Shanghai, Keelung, Manila, Iloilo, Cebu, Saigon, Haiphong, Bangkok, Singapore, Penang is in normal times almost maintained daily by The Indo-China S. N. Co. Ltd., China Navigation Co. Ltd., China Merchants S. N. Co., and the Osaka Shosen Kaisha.

To Canton and Macao: The Hongkong, Canton & Macao Steamboat Co., run steamers twice daily to these ports and in addition to this company there are

several other smaller Chinese concerns.

Hongkong to Philippines: Communication between Hongkong and the Philippines is regularly kept up by the Indo-China S. N. Co. Ltd., and the China Navigation Co. Ltd., with sailings twice weekly. In addition to these a number of the Pacific Orient liners touch at Manila previous to calling at Hongkong. The N. Y. K. Australian Service, together with the Eastern & Australian S. S. Co., also cater to the trade.

Hongkong to Calcutta via Straits: A regular weekly service was formerly maintained on this trade by the Indo-China S. N. Co., The British India S. N. Co. Ltd., "Apcar" Line and the N. Y. K. Government requisitioning disarranged these services during the war and only spasmodic sailings have been maintained.

United Kingdom to Hongkong and vice versa: Previous to the war the P. & O. S. N. Co. and the M. M. Co. each maintained a weekly mail service, and the N. Y. K. and N. D. L. ran steamers fortnightly. A cargo service by the Blue Funnel Lines, The P. & O., N. Y. K., R. M. S. P. Co., "Glen," "Ben," H. A. L. gave shippers opportunities to forward cargo at least twice weekly, but these sailings were considerably changed during the war. Sailings have been very irregular and space extremely limited.

Orient to Pacific Coast: This trade was least affected by the war. All steamship lines, with the exception of the German lines, of course, are fast coming back into this trade. Regular passenger sailings between Hongkong and the Pacific ports are maintained by the Canadian Ocean Services Ltd., The Pacific Mail S. S. Co., the Toyo Kisen Kaisha, The N. Y. K., O. S. K., and Java-China-Japan Line, Rotterdam & Netherland Lloyd, the Waterhouse Steamship Lines and the China Mail S. S. Co.

Hongkong to Japan Run: Sailings to and from Japan are very frequent and hardly a day passes without a steamer sailing to and arriving from Japan ports.

Hongkong to Australia: Sailing every ten days cr so.

Hongkong to South America: The Toyo Kisen Kaisha maintains a regular monthly service to South American ports.

Hongkong to New York direct via Suez or Panama Canal: The New York Conference Service was greatly disorganized by the war and only loaded about one sailing per month. In pre-war days three or four sailings per month left Hongkong for New York direct either by Suez or Panama Canal.

Imports: Cotton piece goods and fancy cotton goods, cotton yarn, woolen goods, raw cottons, metals, petroleum products, coal, rice, sugar, flour, earthenware hardware, etc.

Exports: Rice, silks, feathers, ginger, galangal, cassia oil, Star aniseed and Star aniseed oil, groundnuts, wood oil, soy, human hair, Yunnan tin, Saigon cassia, gallnuts, bristles, matting.

bristles, matting.

Names of Importing and Exporting Firms: J. M. Alves & Co., A. V. Apcar & Co., Arculli Bros., Arnhold Bros & Co., Ltd., Banker & Co., Botelho Bros., Bradley & Co., Ltd., Connell Bros., Carvalho & Currimbhoy & Co., Ltd., S. J. David & Co., Ltd., David Sassoon & Co., Ltd., Dodwell & Co., Ltd., Donnelly & Whyte, Fung Tang, Gande Price & Co., Gibb Livingston & Co., Gilman & Co., Ltd., W. A. Hannibal & Co., W. G. Humphreys & Co., J. D. Hutchison & Co., S. C. Ismail & Co., Jardine, Matheson & Co., Ltd.,

Hogg, Karanjia & Co., Lane Crawford & Co., W. R. Loxley & Co., Mitsui Bussan Kaisha, Ltd., Ming Kee Hong, N. Mody & Co., N. S. Moses & Co., Northwest Trading Co., Newall & Claxton, Patell & Co., Pentreath & Co., Reiss & Co., Robertson, Wilson & Co., Alex Ross & Co., J. M. da Rocha & Co., E. D. Sassoon & Co., Shewan Tomes & Co., H. Skott & Co., Soares & Co., De Sousa & Co., H. Stephens & Co., Thoresen & Co., Union Trading Co., C. E. Warren & Co., Harry Wicking & Co., Yuen Hop Hong, The Hongkong Mercantile Co., Ltd., Thomas W. Simmons & Co., I. Tak & Co., Joseph Bros., G. Martini, Ltd., Maxim & Co., A. B. Moulder & Co., Ltd., T M. Gregory & Co., Manners & Backhouse, Ltd., P. A. Lapicque & Co., Gerin Drevard & Co., Mustard & Co., "Transmarina" Trading Co., Hastings Hodge & Co., Cooper & Co., D. S. Stern Company.

# HONOLULU Hawaijan Islands

Position: Latitude 21 degrees 18 minutes 17 seconds north, longitude 157 degrees 52 minutes 17 seconds west.

Population, 82,846 (count made by Polk-Husted Directory Company in June, 1917).

Collector of Customs, Malcolm A. Franklin. Harbor Master, Capt. William R. Foster.

Honolulu is the largest, most modern and principal port of the Territory of Hawaii. It is located on the south coast of the island of Oahu, and is almost half way between the two outermost islands of the Hawaiian group.

There are five principal islands in the Hawaiian group—Hawaii, Maui, Molokai, Oahu and Kauai—and three smaller ones—Niihau, Kahoolawe and Lanai, forming a chain extending in a general northwest-southeasterly direction for about 450 miles.

Honolulu is the capital city of the territory, a modern, wide-awake, enterprising municipality, fast becoming a popular all the year round tourist center. Chief scenic attractions of the islands are the active volcano of Kilauea, on Hawaii; the extinct crater of Haleakala, on Maui; Waimea Canyon, on Kauai; and Nuuanu Pali, four miles north of Honolulu, Oahu. The sea temperature is 72 to 76 degrees throughout the year, making sea bathing enjoyable every day.

Honolulu harbor is the finest, safest and largest port in the Hawaiian Islands. It is absolutely sheltered in all kinds of weather, including the severe kona storms which blow at times in the winter months from a southerly direction. Northeast trades are the prevailing winds most of the year.

The harbor is entered by a channel 400 feet wide and 3000 feet long, cut through a coral reef, and is protected by an artificial island formed from dredgings. The harbor proper has an average width of 1,200 and a length of 4,000 feet. Minimum depth is 35 feet, mean lower low tide. Originally the port had a natural harbor in the coral reef, caused by a fresh-water creek (Nuuanu Stream) restricting coral growth. Mean tidal range at entrance and head is only 1.9 feet. All vessels are able to enter and leave port with their fulload draft and to discharge and load cargoes while berthed at wharves.

Improvement plans by the U. S. Corps of Engineers include an inner harbor, which when completed will have an area of 112 acres in addition to an entrance channel 400 feet wide and 3,100 feet long. This is known as the Kalihi Harbor project.

Honolulu is appropriately advertised as "The Cross-roads of the Pacific," situated as it is at the intersection of two of the great trunk routes of the world's traffic. The port has not only geographical and climatic advantages to offer, but also low port charges, coupled with facilities for the rapid fueling, drydcking and repairing of ships. There is never any trouble making a landfall in Hawaii, fog is unknown and there are no obstacles to navigation.

The harbor now has 20 wharves which can accommodate ocean steamers. All wharves are under control of the territorial Board of Harbor Commissioners.

Speedy dispatch of vessels calling for bunker coal is given by the Inter-Island Steam Navigation Co. Its present facilities enable steamers to take coal at the rate of 100 tons an hour from one conveyor barge and at the rate of 200 tons from another. A modern marine terminal is now nearing completion, which will enable bunker coal to be put aboard at the rate of 150 tons an hour. Fuel oil for steamers and motor vessels is sold by the Standard, Associated and Union Oil companies.

Principal exports from Hawaii are sugar and pine-apples. The sugar crop for 1916 was 593,483 tons; the 1917 crop about 643,620 tons. The 1916 pineapple crop was 2,500,000 cases. Next in importance are raw coffee, grown on the Island of Hawaii, and rice, grown on all the islands.

Imports: Cotton goods, breadstuffs, automobiles, iron and steel goods, coal.

Exports: Sugar, rice, coffee, hides, tallows, bananas. pineapples.

### Honolulu Pilotage Regulations

A ship sailing under foreign articles must take a pilot. If she does not take a pilot she must pay half pilotage (one-half the regular pilotage fee).

American vessels sailing under enrollment (coasting articles) may come in without a pilot or without paying pilotage, but if the master has no pilot's license for Honolulu, he is violating a federal statute by coming in without a pilot, although he cannot be charged the half rate pilotage fee collected from foreign vessels.

Any vessel entering Honolulu Harbor without a pilot will be boarded by a harbor official from the territorial Board of Harbor Commissioners when inside Honolulu Harbor lighthouse, and the captain will then be shown by the harbor master or assistant harbor master the berth the ship is to take. The captain, however, will be responsible where a pilot is not taken.

#### Honolulu Towage Rates

All towing business at the Port of Honolulu is done by Young Bros., Ltd., and the Matson Navigation Co. Young Bros.' tug is the Makaala, motor propelled vessel, of 41 gross and 10 net tons, 64.7 feet length, 17.6 feet breadth, and 6.2 feet depth, built in 1915.

The Matson Navigation Company's tug stationed at Honolulu is the Intrepid, a steam vessel, 123 gross and

55.25 net tons, 85.5 feet length, 21.2 breadth and 10.3 depth, built in 1900.

At Hilo the tug Printer does all towage work. She is a steam vessel of about the same size and power of the Makaala and Intrepid.

Towage rates at Honolulu, Hilo, Kahului and Port lien are practically the same. The Honolulu rates Allen are practically the same. now prevailing are as follows:

Vessels	under	200	tons	\$30.00
200	and	300	tons	35.00
300	and	500	tons	40.00
500	and	800	tons	45.00
800	and 1	1000	tons	50.00
1000	and I	1200	tons	60.00
1200	and 1	1400	tons	75.00

Over and above 1400 tons, 5c per ton registered tonnage in addition; towing outside pilot limits as per agreement.

#### Additional Rules, Honolulu Harbor

Special rules and regulations covering the control of shipping in Honolulu Harbor for the duration of the war with Germany were adopted by the Territorial Board of Harbor Commissioners, April 24, 1917, as follows:

No vessel or craft of any description shall enter or depart from Honolulu Harbor from one-half hour after sunset until sunrise.

Vessels of over fifteen tons (registered classes) may move from pier to pier within Honolulu Harbor during

day or night.

Vessels under fifteen tons are prohibited from any

Hopolulu Harbor from onemovement whatsoever in Honolulu Harbor from onehalf hour after sunset until sunrise, except ships' row

boats, where said ships are anchored in the stream.

No person will be admitted on Piers 2, 6, 7, 11, 12, 13, 14, 15 and 16 between the hours of 5 o'clock p. m. and 7 o'clock a. m., except employes of a vessel lying at the wharves who must be identified to the guard by an officer of the vessel designated by the Harbor Master for this purpose.

Provided, that at any pier where a vessel is working cargo the guards will be instructed, during such prohibitive hours, to admit to the wharf only the following:

(a) Employes of the Stevedoring Company identified to the guard by an officer appointed by the Board of Harbor Commissioners;

(b) Employes of the Steamship Company or vessel identified to the guard by an officer of the Steamship Company, or vessel lying at the wharf, said officer being designated by the Harbor Master.

(c) Employes of said vessel's agents identified to the guard by an officer appointed by the Board of Harbor Commissioners.



Steel Sheds will be Erected on this Pier at a Cest of \$300.000

Provided, further, when steamers are lying at Piers 2, 6, 7, 11, 12, 13, 14, 15 and 16 with passengers in transit, said passengers, or officers, or employes of the vessel going ashore must, on their return to the steamer. be identified to the guard by an officer of the vessel duly posted for that purpose; said officer having been duly identified to the guard by the Harbor Master.

These rules shall take effect from and after the date

of publication.

Caution: Referring to first three paragraphs hereof, offenders will endanger themselves to the fire of the forts after being warned by a shot across the bow: and violators to any of the above rules will be subject to arrest.

Dated at Honolulu this 24th day of April, 1917. BOARD OF HARBOR COMMISSIONERS. By its Chairman,

(Sgd.) CHARLES R. FORBES.

#### Steamer Routes from Honolulu For San Francisco

Matson Navigation Co.: Agents, Castle & Cooke, Ltd., Fort and Merchant Sts.; telephone 1251. Weekly

Sailings, Freight, passengers, mails.

Oceanic S. S. Co.: C. Brewer & Co., Ltd., agents,
Fort St.; telephone of passenger department 3889,
freight 2633. Sailings every 21 days. Freight, pasfreight 2633. sengers, mails.

China Mail S. S. Co.: H. Hackfeld & Co., Ltd., agents, Hackfeld Bldg., Fort and Queen Sts.; telephone 1241. Manager of shipping department, F. W. Klebahn; telephone 1241. Sailings every 71 days. Freight, passengers, mails.

Great Northern-Pacific S. S. Co.: Fred L. Waldron, Ltd., agents, Fort St.; telephone 3428. Sailings every 18 days during winter tourist season, November to

May. Freight, passengers, mail.

#### For Victoria and Vancouver

Canadian-Australasian Royal Mail Line (Union S. S. Co. of New Zealand, Ltd.): Agents Theo. H. Davies & Co., Ltd., Kaahumanu St.; telephone 3941. Manager shipping department, Wentworth Buchanan. Sailings every four weeks. Freight, passengers, mail.

#### For the Orient

China Mail S. S. Co.: (See for San Francisco.)
Toyo Kisen Kaisha: Alexander Young Building.
Sailings every two weeks. Freight, passengers, mail.
Pacific Mail S. S. Co.: Merchants St. Agent, S. W. Good. Sailings every four weeks. Freight, passengers,

Osaka Shosen Kaisha: Castle & Cooke, Ltd., agents, Fort St.; telephone 1251. Freight only. (Sailings in-

definitely postponed.)

Nippon Yuson Kaisha: C. Brewer & Co., Ltd., agents, ort St. Freight only. (Sailings indefinitely post-

poned.)

Java-Pacific Mail Service (Nederland Royal Mail Line and Rotterdam-Lloyd Royal Mail Line): C. Brewer & Co., Ltd., agents, Fort St.; passenger department telephone 3389, freight 2633. Sailings every two weeks. Freight, passengers, mails.

For Sydney

Oceanic S. S. Co.: (See for San Francisco.) Canadian-Australasian Royal Mail Line: (See for Vancouver.)

For Suva and Auckland (also Sydney)
Canadian-Australasian Royal Mail Line: (See for Vancouver.)

For New York via Panama

American-Hawaiian S. S. Co.: Agency in Hackfeld Bldg., Fort and Queen Sts. General agent, C. P. Morse. (Hawaii-New York service via Panama Canal indefinitely postponed.) Telephone 1241. Freight.

For Pago-Pago, American Samoa Oceanic S. S. Co.: (See for San Francisco.)

#### For Ports in Hawaiian Islands

Inter-Island Steam Navigation Co., Ltd.: Main offices Queen St.; telephone 4941. Sailings semi-weekly to all islands of Hawaiian group, from Honolulu. Freight, passengers, mails,

#### List of Wharves. Honolulu

Pier 1: Government wharf, used by 19th Lighthouse District and U. S. Engineer's Office.

Pier 2: Proposed concrete bulkhead wharf 860 feet long with slip one end 150 feet long. Is to be equipped with traveling crane for handling lumber; is to be primarily a lumber wharf. Owned and controlled by Harbor Board. Depth of water will be 30 feet.

Piers 3, 4, 5: Government piers, used by U. S. Navy and U. S. Army for transport docks and berthing war

vessels.

Pier 6: Lumber Pile wharf 500 feet by 150 feet, has timber constructed shed over entire length of wharf. Slip between 5 and 6 is 140 feet wide, between 6 and 7 is 200 feet wide. Has fuel-oil pipe line. Owned and controlled by Harbor Board. This wharf is used Great Northern-Pacific lines. Depth of water is 30 feet.
Pier 7: Timber pile wharf 600x125 ft., has timber

shed with second story passenger galleries. Has fuel oil pipe line. Territorial pier, used by largest vessels. Slip between 7 and 8 is 200 feet wide. Steamers of Toyc Kisen Kaisha, Canadian-Australian and Java-Pacific Mail Service dock there regularly. Pier contains offices of harbor master and pilots. Depth of water 32 feet.

Piers 8, 9 and 10: Concrete bulkhead wharves in process of construction. Pier No. 8 is 616 feet long; Pier 9 parallel with the channel is 635 feet long, and Pier 10 is 550 feet long. These wharves when completed are to have fireproof freight sheds with second story passenger galleries. Territorial public piers, large enough for his good lines actiling at Hopelulus. Death of water for biggest liners calling at Honolulu. Depth of water at Pier 8 will be 32 feet; Pier 9, 35 feet; Pier 10, 32 feet.

Piers 11, 12, 13, 14: Used only by Inter-Island steams. Owned and controlled by Territorial Board of Harbor Commissioners.

Pier 15: Timber pile bulkhead wharf; is approximately 1,100 feet long and has timber construction freight sheds; has slip between No. 14 and Nc. 15 which is 300 feet long by 150 feet wide. No oil pipe line. Territorial pier, controlled by Harbor Board. Steamers of Matson Navigation Co. use this wharf exclusively on arrival. Depth of water, 32 feet.

Pier 16: Timber pile wharf, approximately 1,150 feet long by 100 feet wide with timber construction sheds. Territorial pier; fuel cil pipe line under construction. Used by steamers and small lumber schooners to discharge cargo. Depth of water, east side of pier, 32 feet; west side, 28 feet.

### Privately-Owned Piers

Pier 17: This pier, also Piers 18, 19 and 20 are owned by the Oahu Railway & Land Company, Ltd. Pier 17 is known as the "Railroad Wharf." It has railway tracks connecting with the main line. Cargo is discharged direct to freight cars. This pier is used by oil tank steamers to discharge their cargoes, pumping them through big pipe lines from the wharf to the tanks in Iwilei. Pier 17 is a timber pile wharf approximately 1,250 feet long by 50 feet wide; no shed. Slip between 16 and 17 is 150 feet wide. Depth of water is 28 feet on both sides.

Pier 18: Timber bulkhead wharf approximately 1,400 feet long; has three large pile sheds. One 75x400; one 150x400, and one 160x400; and two sugar warehouses, approximately 100x400. Depth of water, 28 feet.

Pier 19: Sugar warehouse wharf; depth of water. 30 feet.

Pier 20: Sugar warehouse wharf; depth of water. 30 feet.





Shipping Board Steamers Alengelde Plers Nos. 17 and 18

Piers 19 and 20 are both used exclusively by Matson and American-Hawaiian steamers to load sugar cargoes. A spiral sugar-chute conveyor system carries sugar from warehouses to boats.

#### New Inter-Island Coal Wharf

Is on the southwest side of Pier 20. Depth of water. 30 feet. Vessels will discharge their coal cargoes there and steamers calling for bunkers will load while berthed at the coal wharf. Plant now under construction.

#### U. S. Port Officials-Honolulu

Collector of Customs: Malcolm A. Franklin, cus-

tcm house, Fort St.; telephone 1284.
U. S. Inspector of Steam Vessels: Capt. Robert T. Bain, inspector of Steam Vessels: Capt. Robert 1.
Bain, inspector of hulls, office Young Bldg., Bishop St., room 26; telephone 3182; residence The Roselawn, telephone 2699. Thomas J. Heeney, inspector of boilers, office room 30, Young Bldg., Bishop St., telephone 3182; residence 17th Ave., Kaimuki, corner Pahoe Ave., telephone 3785 phone 7255.
U. S. Shipping Commissioner: William D. Wilder,

custom house, Fort St., telephone 2442.

U. S. Immigration Service: Richard L. Halsey, inspector in charge, immigration station, Channel Wharf, telephone 2037; residence 1805 Wilder Ave., telephone 1373.

U. S. Quarantine (Public Health) Service: Dr. Frederick E. Trotter, surgeon in command and chief quarantine officer, district of Hawaii, office Allen St. near Fort, in rear of custom house, telephone 2112; residence

1536 Kewalo St., telephone 4515.
U. S. Lighthouse Service, 19th Lighthouse District (Hawaii): Frank C. Palmer, superintendent, office 3d floor McCandless Bldg., Bethel St., telephone 2241; residence 1440 Palolo Road, telephone 7474. Arthur E. Arledge, inspector, McCandless Bldg., room 311, telephone 2241; residence 1232 Wilhelming Point 11, telephone 2241; residence 1232 Wilhelming Point 11, telephone 1232 Wilhelming Point 11, telephone phone 2241; residence 1232 Wilhelmina Rise, telephone 7270.

U. S. Engineers Office, Hawaiian Army District: Lieut.-Col. Robert R. Raymond, department engineer, Hawaiian Department, U. S. A., office 301 McCandless Bldg., Bethel St., telephone 1370; residence 1562 Nuuanu Ave., telephone 3277.

#### Honolulu Marine Insurance Agencies

Lloyd's: Theo. H. Davies & Co., Ltd., office Kaahumanu St., telephone 3491. Manager, W. G. Singlehurst.

British & Foreign Marine Insurance Co., Ltd. Theo. H. Davies & Co., Ltd., agents.

Union Marine Insurance Co., Ltd.: Theo. H. Davies & Co., Ltd., agents.

Marine Surveyors: John S. Muirhead, E. Kopke, Capt. William R. Foster, Capt. John R. Macaulay, Capt. J. F. Haglund, Capt. M. A. Madsen.

#### U. S. Government Offices in Honolulu

U. S. Attorney: Model Bldg., Fort St., telephone 1418. Collector of Customs: Fort St., telephone 1284.

Chief Examiner and Custom House: Fort St., telephone 2442.

District Court: Model Bldg., Fort St., telephone 2063. U. S. Engineer Hawaiian Army District: McCandless Bldg., Bethel St., telephone 1370.

Food and Drug Inspector: Kapuiwa Bldg., King St., telephone 4578.

Hydrographic Office: Kapiolani Bldg., Alakea and King St., telephone 3662.

Immigration Service: Channel Wharf, telephone 4221.

Chief inspector's office, telephone 2037.

Inspector of Steam Vessels: Young Bldg., Bishop St.,

telephone 3182.

Internal Revenue and Income Tax Office: Capitol Bldg., collector's office, telephone 2306.

Land Office: Capitol Bldg., telephone 1211. Lighthouse Inspector, 19th Lighthouse District: Mc-Candless Bldg., Bethel St., telephone 2241.

U. S. Marshal: Model Bldg., Fort St., telephone 2757. Naturalization Service: Clerk's office, Federal Court,

Model Bldg., Fort St., telephone 2063. Navy Recruiting Station: Old Naval Station, Allen

St., waterfront, telephone 2726.

Postoffice: Bethel St., telephone 2513.

Public Health and Marine Hospital Service: Allen St., waterfront, rear of custom house, office of chief quarantine officer, telephone 2112.

Quartermaster, Hawaiian Department U. S. A.: Hotel St. department quartermaster, telephone 1878; supplies division and sales commissary, telephone 3933; transportation department, 2130.

Weather Bureau: Young Bldg., Bishop St., telephone 2114.

#### Seamen's Institute, Honolulu

Corner Alakea and Halekauila Sts. C. F. Mant, Supt.

#### Sailors Union of the Pacific

Office 810 Nuuanu Ave., corner Queen St. John Edwardson, business agent.

## **HUASCO** Chile

Position: Latitude 28 degrees 34 minutes south, longitude 71 degrees 21 minutes west.

Stevedoring: Rates for loading and discharging cargo, no tariff for labor. Cost for general labor, no fixed

Accommodation: Not good for discharging. Many launches to take tonnage but poor facilities on shore. Vessels anchor 8 fathoms half mile out. North winds sometimes impede work. One mole for heavy cargo, about 200 tons per day, 2 cranes.

Imports: Machinery, general supplies. Exports: Copper ore, raisins, wines, hides, silver, iron, hay, figs.

Steamer Lines Using the Port: C. S. V. A., P. S. N. C.

# **ICHANG**

Position: On north bank of the Yangszte river, 393 miles from Hankow, and about 900 miles from Shanghai. The anchoring of vessels and leading and discharging is regulated by the Imperial Maritime Customs.

Port Charges: For vessels over 150 tons, 4 mace per ton; vessels under 150 tons, 1 mace per ton. There are

Accommodation: The depth of the water varies through the year. During the summer months vessels up to 12 and 15 feet draft can be accommodated, but during the winter the receding waters limit the harbor to vessels of not more than 7 feet draft. There are no cranes, docks, or drydocks.

Imports: Cambrics, muslins, cotton yarn, grey shirtings, piece goods, drills, buttons, dyes, sugar,

kerosene.

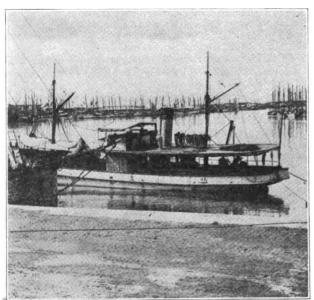
Exports: Hides, vegetable tallow, varnish, beans, wheat, coal, wood oil, medicines, raw cotton, untanned goat skins, crude vegetable wax.

## **ILOILO** Philippine Islands

Position: Latitude 11 degrees north, longitude 123 degrees east.

Population: 47,933.

Filotage: Compulsory.



Holle Harbor-Copyrighted by Underwood & Underwood

Port Charges: Tonnage or wharf dues, 12½c P. I. Cy. per net registered ton or 35c per 1,000 kilos, on merchandise loaded and/or discharged at ship's option. Customs, Stamps on manifest and bill of health P9, if with passengers P10. Overtime P1.20 for each inspector and P0.45 for each guard, per hour, after 6 p. m. till 6:30 a. m. Light dues, no light available. Other Charges, Government piers if used more than 8 hours

P0.01 per gross ton register per day or part of day.

Stevedoring: Rates for loading and discharging cargo, P0.45 per ton. Overtime cost per hour, P30 per gang per night. Cost for general labor, P1.20 per man per day. Lighterage, cost per ton, Bay, general and coal Pl., sugar P0.80; River P0.80 and P0.50, respectively. Lighterage, cost per lighter per day, P45.

Accommodation: Land-locked straits between Island of Guimaras and mainland. Iloilo River, upper reach having extensive wharf and lower reach having Government piers in front of principal warehouses. When the river is dredged there is 18 feet in upper reach and 24 feet in lower reach at low water spring tides, but as the Insular Government has not sent a dredge to Iloilo for some time, there is now not over 15 feet in the upper reach and 20 feet in the lower reach.

Imports: General merchandise for local consumption, including soft goods, hardware, machinery, coal,

rice, flour, canned goods, petroleum and gasoline.

Exports are comprised chiefly of sugar, copra, hemp,

tobacco and sapan wood.

Names of Importing and Exporting Firms: Smith, Bell & Co. Ltd., W. F. Stevenson & Co. Ltd., Warner, Barnes & Co. Ltd., Ker & Co., Pacific Commercial Co., Compania General de Tobacos de Filipinas.

Steamer Lines Using the Port: China Navigation Co. Ltd., trading with Hongkong.

Consular Representation: Great Britain, Spain, Norway, China.

The dry season is from October to May incl. (N. E. monsoon) and the wet season from June to September (S. E. monsoon). Iloilo is too far south to come within the actual typhoon zone, although when a typhoon is in the vicinity considerable heavy rain and wind are usually experienced.

## **INVERCARGILL** New Zealand

Location: Invercargill is situated on Foveaux Strait. Vessels too large for access to the harbor stop at Bluff Harbor.

Population: 16,000. Imports are largely confined to a run of general merchandise and timber.

Pilotage: 2½d. per ton n. r., inwards and outwards.

Port Charges: 3d, per ton net. reg. per trip, but not to exceed 9d. per ton in any six months. Berthage dues, 1d. per ton net, reg. for first day or part thereof; 1d. per ton for second day or part thereof; and 1/4d. per ton for each succeeding day or part of day. Light dues, state, 4d. per ton if first port of call; ¼d. per ton coastwise

Stevedoring: Discharging, 1/8 to 2/- per ton. Loading general, 2/- per ton. Frozen cargo, various, according to class of cargo.

Accommodation: At Bluff there is a large wharf with five lines of rails, with depth from 20 to 31 feet. The largest steamers trading to New Zealand, such as the "Ionic," "Corinthic," "Athenic" are accommodated at this wharf.

# **IQUIQUE**

Position: Latitude 20 degrees 12 minutes south, longitude 70 degrees 11 minutes west.

Population: About 40,000. Pilotage: Not compulsory.



Port Charges: Tonnage or wharf dues, none. Customs, none. Light dues and hospital, steamships about \$0.273 U. S. G. per net ton, sailing vessels about \$0.182

U. S. G. per net ton, once in a year.

Stevedoring: Rates for loading cargo, about \$0.25 per ton (nitrate). Rates for discharging cargo about \$0.45 per ton (coal). Overtime cost per hour for general labor, about \$0.30 U. S. G. Lighterage, cost per ton, about \$0.40 U. S. G.

Boats coming alongside before the port captain goes aboard are liable to a fine of 50 pesos. Masters are required to leave the port after the cargo has been on board for 48 hours, nor are they allowed to land after being cleared by the authorities.

Accommodation: Open bay.

Imports: General merchandise, machinery, foodstuffs.

Exports: Nitrate, iodine, hides, ores.

Names of Importing and Exporting Firms: Nitrate Agencies Ltd., Gibbs & Co., Buchanan, Jones & Co., Harrington, Morrison & Co., Lockett Bros. & Co.

Steamer Lines Using the Port: Pacific Steamship Navigation Co., Compania Sud Americana de Vapores, W. R. Grace & Co., America-Hawaiian Atlantic & Pacific Steamship Co., Merchants' Line, Luckenbach Co., Cia. Peruana de Vapores, Toyo Kisen Kaisha.

Consular Representation: England, Argentina, Bolivia, Mexico, Panama, Venezuela, Belgium, Ecuador, Japan, Colombia, Peru, Vice-Consuls: Brazil, France, Spain, Sweden, Norway and Denmark. Consular Agents: United States and Italy.

Iquique during the European war depended largely upon the nitrate industry. Nitrate is used as fertilizer and also in the manufacture of munitions. During the year 1916, 1,116,252,500 pounds of nitrate, worth about \$20,833,100 U. S. Gold, were exported to the United States. Iodine, hides, and ores are also exported to the United States.

## **JENCHUAN** Chosen

Position: Latitude 39 degrees 9 minutes north, longitude 127 degrees 33 minutes east.

Population: 13,000

Port Charges: Tonnage dues, 30c per ton reg.

Exports: Fish, hides, beans.

## JUNEAU Alaska

Latitude 58 degrees 19 minutes north, longitude 134 degrees 28 minutes west.

Distance from Seattle, 867 miles.

Population, including Douglas, Treadwell, Thane, and radius of five miles, 7,500.

Wharves: City wharf, owned and operated by city; Worthern Lumber Co. wharf; Alaska-Juneau Mining Co. dock; City wharf, Douglas; Juneau Ferry & Navigation Co. wharf, Douglas; Alaska-Treadwell Gold Mining Co. wharf, Treadwell.

Steamship Lines: Juneau Ferry & Navigation Co., Juneau S. S. Co. for local points. All lines calling at Ketchikan, offering a sailing about every day to and from

Harbor: At head of Gastineau channel. Offers a good harbor with anchorage and with sufficient depth of water for coastwise steamers at wharves. Juneau is the capital of Alaska and territorial government offices are located here. J. F. Pugh is collector of customs; Geo. H. Whitney, inspector of hulls, and Thos. Banbury, city wharfinger.

Douglas is located opposite Juneau on Douglas Island, and has also a fine harbor, with sufficient wharfage room for present traffic.

#### KAHULUI

#### Hawaiian Islands

Latitude 20 degrees 54 minutes 10 seconds north, longitude 156 degrees 28 minutes 21 seconds west.

Population, about 1,000.

Harbor Master and Pilot, Capt. E. H. Parker.

Kahului harbor is on the north (windward) coast of the Island of Maui, about 110 miles by water S. 18 degrees E. from Honolulu and about 100 miles by water 41 degrees W. from Hilo.

Entrance to the habor is through a dredged inlet in a coral reef. The harbor has a general width of 700 feet and an area of about 25 acres. It is protected from the prevailing winds, the northeast trades, by a 2,200-foot breakwater, and has a depth of 35 feet or over at mean lower low tide.

Construction of the breakwater has made it possible to load vessels except during severe storms from the

north.

Kahului is the terminus of the Kahului Railroad, and lumber schooners discharge and load cargo at the wharf. but large vessels, such as American-Hawaiian and Matson steamers, also oil tankers of the Standard, Union and Associated Oil fleets, have to make fast to mooring buoys inside the breakwater and discharge and load cargos by means of a lighterage system operated by the railway company.

Kahului is about four miles from Wailuku, the county seat of Maui. Kahului is the principal port on the Island of Maui.

David C. Lindsey is deputy collector of customs at Kahului.

## KARATSU -

#### Japan

Population, about 30,000.

Bunkering port in latitude 33 degrees 40 minutes north, longitude 129 degrees 95 minutes east. The harbor is accessible to all vessels up to 12,000 tons, with anchorage in 6 to 7 fathoms. The average rate per hour for bunkering ships is 150 tons to 200 tons.

Ordinary ship repairs are obtainable here. A considerable quantity of coal is exported.

#### **KEELUNG**

### **Formosa**

Position: Latitude 25 degrees 9 minutes 22 seconds north, longitude 121 degrees 44 minutes 37 seconds east.

Population: 37,828.

Pilotage: Not compulsory. The pilots shall respond to the call of any vessel requiring their services. A pilot when on duty shall carry his license with him. A pilot boat when on pilotage duty shall exhibit by day, the pilot jack (41/2x 3 ft.) and by night carefully show the proper lights required by the International Regulations. On taking charge of a vessel the pilot shall hand in his name in writing and show his license if required.

Scale of Pilotage Fees (in Yen): 3,000 gross tons and under, Outer Harbor, in and out 30, in 25, out 10; Inner Harbor, in and out 40, in 35, out 10. 3,001-5,000 gross tons. Outer Harbor, in and out 40, in 35, out 10; Inner Harbor, in and out 50, in 45, out 10. 5,001-7,000 gross tons. Outer Harbor, in and out 50, in 45, out 10; Inner Harbor, in and out 50, in 45, out 10; I and out 70, in 65, out 10. Above 15,000 gross tons, Outer Harbor in and out 60, in 55, out 10: Inner Harbor, in and out 70, in 65, out 10. Above 15,000 gross tons, Outer Harbor, in and out 65, in 60, out 10, Inner Harbor, in and out 75; in 70, out 10. N. B.—10 Yen extra is added if pilotage is performed at night.

Photographing within Prohibited Areas: As Keelung lies in the fortified area, any person, without permission, found taking photographs, making sketches or surveys of

any defensive works or topographical features within the fortified zone shall be liable to a penalty or a major imprisonment by the Japanese law. This zone embraces a radius of 634 miles from Keelung, including Suishen Kyaku and Kimpoori. N. B.—Suishen Kyaku is a town situated midway betwen Keelung and Taipeh along the railway line.

Accommodation: A breakwater is constructed at the entrance of the harbor, making the inner harbor very calm. The entrance to the harbor is wide enough to permit vessels of less than 6,000 tons to pass freely in and out. It is possible for four 6,000-ton ships to lie alongside the wharves. There are also two piers capable of accommodating two 2,000-ton ships. On the wharves there are four iron and concrete sheds and nine cranes (2 of 10 tons capacity, 1 of 30 tons, and 6 of 1½ tons). Keelung contains several shipbuilding yards, but all of them very small. There is only one dock which is able to accommodate only vessels of small dimensions. Altogether, including wharves, piers and buoys, there are accommodations for 17 vessels. The depth of the harbor is 30 feet at neap tide. The quay has a length of 2,250 feet and is divided into four sections, numbering 1, 2, 3 and 4, on which are built a corresponding number of transit sheds, each measuring 450x60 feet, with railway tracks laid for the rapid handling of cargo. There are six tons, and two electric cranes lifting 10 tons. A heavy lifting crane is erected at the end of No. 4 section of the quay, capable of lifting 30 tons. The quay will take vessels of 10,000 tons.

Mooring Buoys: Outer Harbor. There are two mooring buoys; No. 1 bears from Lt. Ho. S. 5 degrees E., and from Bush I Bn. S. 1 degree W.; No. 2 bears from Lt. Ho. S. 26 degrees E. and from Bush I Bn. S. 24 degrees W.

Inner Harbor. There are several mooring buoys, taking

six vessels of 2,000 to 10,000 tons.

There are also 3 buoys and 3 sunken chains laid along the quay front and the piers, about 210 feet apart; these are specially meant for vessels' stern mooring. The ends of these sunken chains are triced up on the mooring posts in front of the third and fourth sheds.

Weather and Time Signals: Weather telegrams from Taipeh Observatory are exhibited on the Notice Boards at the Harbor office.

At noon China Coast M. T. (120 degree E.) a gun will be fired from the top of a hill near the Keelung local office.

Wireless Telegraph and Telephone Service: The wireless telegraph mast is erected on Cape Fukikaku where the light house stands. The wireless telephone mast is situated behind the light house at Image Point, Keelung. Both systems transact universal messages at all times.

Coal: Keelung produces about 130,000 tons of coal per annum and about 8,000 tons are kept in stock at all times. It compares favorably with Japanese coal the analysis being as follows:

Moisture 4.52 per cent, volatile matter 40.05 per cent, coke 35.11 per cent, ashes 2.32 per cent, sulphur 1.32 per cent, heating value 7,260 calories. Price of bunker coal, double-screened 10 yen per ton, large or lump 8 yen per ton, unscreened 6 yen per ton, dust 4 yen per ton.

Water: Is good and abundant. The price is regulated according to the distance from the source of supply. At the quay 15 sen per ton, Inner Harbor 25 sen per ton, Outer Harbor 35 sen per ton.

Call Flag: International Code "W."

Names of Importing and Exporting Firms: Boyd & Co., Tait & Co., Jardine, Matheson & Co., Ltd., Carter, Macy & Co. Inc., J. C. Witney Co., Mitsui Bussan Kaisha Ltd., Samuel, Samuel & Co. Ltd., Standard Oil Co. of New York, Mitsubishi & Co., Suzuki & Co., Yayeyama Coal Mine Office.

Steamer Lines Using the Port: Osaka Shosen Kaisha, China Coast Ports, Japan and Pacific Coast; Nippon Yusen Kaisha, Japan and Pacific Coast.

Consular Representation: Great Britain, United States, Holland.

## **KETCHIKAN** Alaska

Latitude 55 degrees 30 minutes north, longitude 131 de-

prees 25 minutes west.

Distance from Seattle, 661 miles.

Population, 2,000.

Wharves: One, owned and operated by Ketchikan Wharf Company.

Steamship Lines: Alaska S. S. Co., Pacific Steamship Co., Canadian Pacific B. C. Service, Humboldt S. S. Co.,

all operating frequent schedules.

Harbor: Located in Tongass narrows, offers commodious anchorage, with sufficient depth of water at wharf for all coastwise vessels.

# **KIUKIANG**

An open treaty port on the Yangszte River, situated near the outlet of the Poyang Lake, with a population of about 60,000 inhabitants. Kiukiang is about 142 miles from Hankow, and 454 miles from Shanghai. All vessels plying the river make this a regular port of call.

Pilotage: Not compulsory.

Port Charges: Tonnage dues on all vessels.

Accommodation: There is considerable room for anchorage, and an absence of tide. The port has seven hulks, five of which are connected with the shore by pontoons. These will take care of any sized vessel.

Imports: Kerosene oil, cotton yarn, cotton piece goods, etroleum, velvets, woollens, white and brown sugar, petroleum,

copper, lead.
Exports: Tea, tobacco, beans, hemp, indigo, sesamum seeds, paper, peas.

Consular Representatives: Great Britain, Japan.

# KIUNG CHOW

China

(See Hoihow). Population: 20,000.

Pilotage: Private. Pilots are ordinarily engaged at

Hongkong or Haiphong for up the gulf.

Port Charges: Tonnage dues, 4 mace per ton (good for any port in China). Vessels load and discharge into Port Charges: Tonnage dues, 4 for any port in China). Vessels los native boats at about 25 cents a ton.

Imports: Petroleum, cotton, woollen goods, kerosene oil, flour.

Exports: Grass cloth, sugar, pigs, betel nuts, matches, leather.

The bulk of the trade of this port is carried on with Hongkong.

# KOBE (Hiogo)

Position: Latitude 34 degrees 40 minutes north, longitude 135 degrees 14 minutes east.

Population: 551,872.

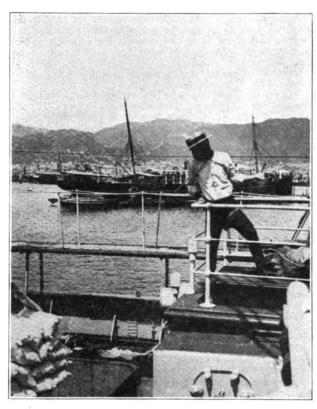
Principal port of entry of the empire. More than 3,000 vessels enter each year. Three hundred and forty-eight miles by water southwest of Yokohama. At head of Bay of Osaka. Port of call for all principal steamship lines. Good anchorage in mud and sand.

Pilotage: Advisable, not compulsory. 3½ to 6½ yen

Port Charges: Tonnage dues each entry, 5 sen per net regular ton; 15 sen for the year. Customs buoy, steamer up to 5,000 tons, yen 7 per day; steamer over 5,000 tons, yen 10 per day. Light dues, none. Other charges, wharf dues, 2 sen per ton first day, 1 sen per ton thereafter.

Stevedoring: Rates for loading and discharging cargo, about 24 cents to 38 cents. Overtime cost per hour (labor),





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28 sen per man. Cost per hour for general labor, 14 sen per man. Lighterage, cost per ton, average yen 1 (paid by consignees). Lighterage, cost per lighter per day 15 sen ner ton.

Accommodation: Anchorage 500 acres, four piers, 1,200 feet long, accommodating up to 16 steamers; draft at low water 28 feet; ample accommodation in harbor where most steamers discharge and load. Kawasaki Dock Co. has one graving dock, 425 feet, and one slip 280 feet long. The Mitsu Bishi Dock Co. has one floating dock of 7,000 tons and one of 12,000 tons.

Government quay walls, 1,797 feet long, with iron and

wooden storage sheds.

Tokyo Warehousing Company, iron piers 600x62 feet with 26 feet of water, with ample sheds, cranes, etc., mooring walls at Takaham, 1,704 feet long with 27 feet of water, and sheds and warehouses.

of water, and sheds and warehouses.

Imports: Cotton, steel, iron, tin, coal, rice cotton, manures, manufactured goods.

Exports: Oil, copper, cereals, braids, tea, silk, matting, porcelain, cotton goods, rice, straw.

Names of Importing and Exporting Firms: Jardine, Matheson & Co. Ltd., Cornes & Co., Samuel & Co. Ltd., W. H. Strachan & Co. Ltd., Dodwell & Co., Rogers Brown & Co.

Steamer Lines Using the Port: International Shipping Co., Ltd., Frank Waterhouse & Co., general agents, all Co., Ltd., Frank Waterhouse & Co., general agents, all Pacific lines, local lines from Kobe to Shanghai, Hongkong, Tientsin, Vladivostok, Chemulpo, Dairen, Singapore, Penang, India and all principal eastern ports.

Consular Representation: All nations have consuls except the following which have consular agents, Italy, Norway, Sweden, Brazil, Portugal. Robt. Frazer, Jr., is consul for the United States.

The progress of the development work going on in the harbor has been rapid. With the exception of the walls above sea level on No. 3 and No. 4 piers, the sea-walls of the new docks have been completed, while the warehouses, railways and roads are practically complete on Piers No. 1, 2, and 4. The railways connect with the Government Railways at Onohamo Station, while the roads connect with Kano-Cho and Kyobashi-Dori. There are four warehouses on No. 1 pier, four on No. 2 pier and three on No. 4 pier, which, together with the temporary sheds erected on No. 3 pier to relieve the congestion in the warehouses, make a total of 14 warehouses, covering 62,694 square yards. There are three 1½ ton portable electric cranes on piers No. 1, 2, and 4, while five more electric cranes are under construction.

In 1917, vessels to the amout of 940,976 registered tons were accommodated at the new piers, while 748,753 tons

of cargo were landed.

The eastern breakwater, built of stone, reinforced concrete and concrete blocks, is complete with the exception of the upper walls, the lighthouses at the ends being now The foundation stones for 1,500 feet of the southern breakwater have been laid and the upper works of concrete blocks, are now in process of construction.

of concrete blocks, are now in process of construction. Following is a summary of the work completed to date: Land reclaimed, 306,350 square yards, or 93 per cent of the proposed reclamation work, of which 159,322 square yards form the four piers, as follows: Pier No. 1, 25,410 square yards; pier No. 2, 45,355 square yards; pier No. 3, 44,255 square yards; pier No. 4, 44,302 square yards. Base area of piers, 147,026 square yards; dredge area, 1,324,581 square yards; anchorage walls, 9,552 feet; landing stage and walls, 1,905 feet; protection wall for No. 1 pier 2,301 feet 2.301 feet.

#### Warehouses

Two wooden warehouses, 4,171 square yards; 9 steel warehouses, 34,797 square yards being 59% of proposed warehouse area. Steel warehouses situated as follows: warehouse area. Steel warehouses situated as follows: No. 1 pier, No. 1 warehouse, 6,596 square yards and No. 2 warehouse, 4,313 square yards; No. 2 pier, No. 3 warehouse, 4,645 square yards, No. 4 warehouse, 4,645 square yards, No. 5 warehouse, 3,318 square yards, No. 6 warehouse, 2,654 square yards; No. 4 pier, No. 17 warehouse, 3,318 square yards, No. 18 warehouse, 2,654 square yards and No. 19 warehouse, 2,645 square yards. Three temporary sheds, 23,722 square yards, situated as follows: No. 3 pier, No. 1 shed, 8,709 square yards and No. 2 shed, 8,709 square yards; No. 3 landing stage, 6,304 square yards. yards.

#### Roads and Bridges

Roads: 72 feet wide including sidewalks, 1,530 feet; 60 feet wide including sidewalks, 3,096 feet; 48 feet wide without sidewalks, 2,850 feet; 42 feet wide including one sidewalk, 1,392 feet. One bridge, 60 feet wide, including sidewalks and 60 feet long.

Four 5-ton capacity, stationary hand-power, completed; One 30-ton capacity, stationary hand-power, completed; Three 1½-ton capacity, portable electric power, completed; Five 11/2-ton capacity portable electric power, under construction.

#### Railways

For steam trains, 441 chains; for portable cranes, 75

# **KUNSAN**

Chosen

Position: On Keum River, 10 miles from mouth. Accommodation: Shoals and 23 to 24 foot rise and fall of tide renders navigation dangerous for any ship over 2,000 tons. Depth at mouth of river, 16 feet, H. W. N. T.; four customs jetties, three are 198 feet long and the fourth 210 feet.

Imports: Cotton goods, timber, flour, porcelain, sugar, provisions, matches, straw bags. Exports: Beans, rice, cowhide.

# **KUSHIRO**

#### Japan

Position: Latitude 42 degrees 59 minutes north, longitude 144 degrees 24 minutes east.

Port Charges: Harbor dues, 5 sen per regular ton. Loading and discharging, about 60 sen per ton. Accommodation: Depth, 36 feet at entrance, 20 to 36 feet at berth, 15 feet at quay. The harbor is landlocked on two sides, the east and south, and there is a breakwater building on the west side. Export: Timber.

# **KUTCHINOTSU** Japan

Position: Latitude 33 degrees 37 minutes north, longi-

tude 130 degrees 12 minutes east.
Pilotage: No pilots, but they may be engaged at Pilotage: Nagasaki.

Port Charges: Tonnage dues, same as those prevailing at Nagasaki. No entrance and clearance charges

Accommodation: The harbor is small, with 24 feet at L. W. S. T.

Exports: Coal.

## LA LIBERTAD Salvador

Position: Latitude 13 degrees 27 minutes north, longitude 89 degrees 19 minutes west. Population: 2,500.

Population: 2,500.

Imports: General merchandise, manufactured goods.

Exports: Coffee, skins, rubber, sugar.

Accommodation: This is an open roadstead in which vessels anchor in 7 fathoms opposite the pier, and are loaded and discharged by lighters. The holding ground is good. The pier is built of iron, and is 919 feet long and 50 feet wide at the sea end. It has one donkey-engine to lift 10 tons, and one crane to lift 15 tons. From the wharf to the anchorage there is a depth of from 5 to 10½ fathoms. The difference between high and low water is 1 fathom. There is a tugboat, which greatly facilitates

I fathom. There is a tugboat, which greatly facilitates loading and discharging.

Port Charges: Entrance fees, 12½ cents per regular ton. Boat hire, \$3.00 silver. Light dues, \$10 silver. Labor, as per agreement. Brokerage, \$30.00 silver. Sanitary visit and bill of health, \$5 silver. Roll, \$3 silver. Fresh water is plentiful, and can be obtained free of charge. Provisions, beef, 10 cents gold per pound.

# **LAUNCESTON** Tasmania, Australia

Position: Latitude 41 degrees 23 minutes south, longitude 147 degrees 8 minutes east.
Population: 25,000.
Pilotage: Compulsory.

Port Charges: Tonnage or wharf dues, vary as to class of article. Customs, duty paid on ship stores. Light dues, 9d. per net regular ton. Other charges, harbor, towage, crane, etc.



Harbor of Launceston-Copyrighted by Underwood & Underwood

Accommodation: At high tide vessels up to 350 feet long, 22 foot draft can be accommodated; at low tide there is only about 12 feet of water at the wharves. There is more than 3,000 feet of wharfage. Anchorage is not too good.

Imports: General manufactured goods.
Exports: Minerals, wool, hides, and skins.
Names of Importing and Exporting Firms: Hart &
Sons, W. & G. Genders, James Barclay, Lindsay Tullock, Birchall & Sons, T. J. Gunn.

Steamer Lines Using the Port: Only local and interstate.

Consular Representation: None.

# LIMA (See Callao) Peru

# LONG BEACH California

Population (1918): 53.460, estimated from City Direc-

Distance: San Francisco, 391.25 (nautical miles); San Diego, 87.5 (nautical miles).
Wharfinger: Glenn A. Wallace.

One mooring buoy.

Salt Lake Ry., Pacific Electric Ry., and Southern Pacific

have direct connections with the harbor district.

Oil connections go past the wharf, with a station situated near outlet of harbor.

Over \$2,000,000 has been expended on the inner harbor by private capital and the city. The harbor is protected by a government breakwater and also by Long Beach break-

a government breakwater and also by Long Beach breakwater 1500 feet long, costing \$215,000.

The City of Long Beach owns water frontage and municipal docks with frontage of 2132 feet.

Water Rate: First 500 feet, 12c per 100, minimum of 60c; 2nd 500 feet, 11c per 100; next 2000 feet, 10c per 100; next 3000 feet, 8c per 100; next 10000 feet, 6c per 100. All in excess of above 4½c per 100 feet. Agricultural rate: 41/2c per 100 feet.

The \$300,000 bond issue of 1916 has been sold and addi-The \$300,000 bond issue of 1916 has been sold and additional dredging and work on the Connecting Channel has been started. The Connecting Channel, for which the government appropriated \$130,000 in addition to the bonds voted by the City of Long Beach, is being dredged and widened. This channel will connect the harbor of Los Angeles with that of Long Beach and will provide excellent inland passage. The Long Beach Shipbuilding Company which has a first-class dry dock has built several pany, which has a first-class dry dock, has built several steel ships for the government during the past year. There are nine fish and fruit canning plants, one large woolen mill, several large lumber mills, machine shops, and several other manufacturing plants located on the harbor's edge. The Southern California Edison Company's plant, which furnishes electrical energy for a large part of Southren California, is located at the entrance of the harbor. The problem of flood control is soon to be settled, and with it Long Beach Harbor will make great strides forward

## LOS ANGELES California

Position: Latitude 33 degrees 42 minutes north, longitude 118 degrees 16 minutes west. Population 650,000.

Pilotage: Vessels entering or leaving the Port of Los Angeles under the pilotage of any person other than the master thereof, thereunto duly licensed, must pay pilotage.

#### Wharfage Rates

Port Charges: Wharfage—Section 1. That the rates or charges for wharfage upon all wharves, piers, docks, quays and landings, owned, controlled or operated by the City of Los Angeles, are hereby fixed as follows, such rates being in cents and for tons of two thousand pounds, unless otherwise specified:



Entrance to the Harber at San Pedre, the Pert of Les Anneles—Copyrighted by Underwood & Underwood

- 1. Clay and paving bricks, asphalt, cement, lime, plaster, sand, clay, soapstone, dry mineral paints, manganese ore, pulverized feldspar, raw borax, silica, talc, pumice, barytes, and similar mineral products in packages per ton, 2½ cents.
- 2. Wheat flour, corn meal, salt, sugar, rice, iron bolts, nuts, rivets, nails, washers, horseshoes, spikes, staples, common window glass (crated or boxed), grain, bran, cotton seed meal or cake, mill feed, poultry food, grits, coffee, peas, beans, potatoes, onions, dried beet pulp, brick (other than paving), burlap, bags (burlap or jute), fertilizers not otherwise specified, in packages, per ton, 5 cents.
  - Barrels, empty, each 1/4 cent.
  - Iron drums, empty, each 34 cent.
  - Coal, coke, charcoal, briquets and fish, per ton, 5 cents.
  - Cattle, each 3 cents.
  - Horses or mules each 1/2 cent.
  - Hogs or sheep, each 1/2 cent.
- 9. Lumber and other products not otherwise specified, per M feet, B. M., 10 cents.
  - 10. Piles and poles per linear foot, 1/10 cent.
  - 11. Veneer or panels, per ton, 10 cents.
  - 12.
  - Cord wood, per cord, 10 cents.
    Oil in bulk, by pipe line, per barrel, 1 cent.
    Rock in bulk, 2½ cents. 13.
  - 14.
- 15. Vehicles, two-, three-, and four-wheeler, motor or team, set up, 1,000 pounds and under, each 5 cents.
- 16. Vehicles, four-wheeled motor or team, set up, over San Diego Bay Beacon, red, 1,000 pounds and under 4,000 pounds, each 10 cents.
- Vehicles, four-wheeled, motor or team, set up, over 4,000 pounds, each 25 cents.
- 18. Water delivered to vessels per M gallons, 5 cents (a charge of 50 cents may be made for the service of turning water on and off and attaching meter).
- 19. Merchandise, not otherwise specified, per ton, 10 cents.
- 20. Provided that no charge shall be made for wharfage on goods or merchandise passing over any ferry landing owned, controlled or operated by the City of Los Angeles, from or to any boat operating under franchise granted by the City of Los Angeles, or other legal authority.
- 21. The term "wharfage" as used herein is defined to mean the service or use of the wharf in the passage of goods thereover, or for storage of goods thereon, awaiting shipment or in transit. The term "wharf" is defined to include the area between pierhead and bulkhead line, and any wharf-shed or transit-shed used in the transit of goods or merchandise utilizing a wharf. Any wharf, pier, dock, slip,

quay or landing occupying any area between bulkhead and pierhead line, not covered by franchise or other right granted by due legal authority is hereby declared to be a wharf, pier, dock, slip, quay or landing of the City of Los Angeles under the meaning of this order.

22. The rates for wharfage herein prescribed shall be for wharfage (a) On inbound cargo for a period not exceeding forty-eight (48) hours after the final discharge of the ship, vessel or craft from which the merchandise on which such wharfage is charged, is completed. If such merchandise is not removed within said forty-eight (48) hours, storage thereon in addition to the wharfage charge above provided, shall be charged at the rate of ten (10) cents per ton. weight or measurement, at the option of the City of Los Angeles, per month from and after the expiration of said forty-eight hours. (b) On outbound cargo such wharfage charges shall be for the period from the time of the arrival of the merchandise on the wharf until the first sailing there-after from said wharf to the point to which, or on the route over which the merchandise affected is billed, providing such period does not exceed ten days. If such merchandise is not shipped on the first sailing above referred to, storage thereon, in addition to the wharfage charge herein provided, shall be charged at the rate of ten (10) cents per ton, weight or measurement, at the option of the City of Los Angeles, per month, from the time of arrival of said merchandise on the wharf until it is shipped. If the period between the arrival of the merchandise and the first sailing referred to is more than ten (10) days, storage on such merchandise for such additional time shall be charged at the rate of ten (10) cents per ton, weight or measurement, at the option of the city.

Provided, however, that the Board of Harbor Commissioners may, at its option, refuse to accept goods or merchandise for such storage in transit at said rate of ten (10) cents per ton, and if such goods or merchandise are left in storage in any transit shed notwithstanding such refusal the storage rate thereon shall be in the nature of a demur-rage charge at the rate of twenty (20) cents per ton, due allowance to be made for such free time as may be specified above on inbound and outbound cargoes, respectively; and

Provided, further, that the grantee of any berthing permit may at his own expense and risk, with the consent of the Board of Harbor Commissioners, store merchandise in any space assigned to such grantee by such berthing permit, and assume all legal responsibility in connection with such storage, in which event the grantee shall pay to the city for such storage nine (9) cents per month, per ton, weight or measurement, at the option of the city, and shall charge for such service not to exceed ten (10) cents per

#### Handling Charges

Handling: Section 2. The shipper or consignee shall if the City of Los Angeles so elects, deliver his goods or merchandise direct to the steamship or transportation company or agent at the wharf, or accept delivery direct from the steamship or transportation company or agent at the wharf, in which event the City of Los Angeles will make no charge for handling.

In the event that handling of goods or merchandise is done by the City of Los Angeles, the charge for such handling service shall be costs plus ten (10) per cent.

The term "handling," as used in this order, means the service of transporting goods or merchandise from car or other vehicle, or from storage or transit shed, to the place of delivery to the steamship or transportation company or agent, or vice versa.

#### Dockage Rates

Dockage: Sec. 3. That for the use of any wharf, pier, dock, quay, slip or landing, owned, controlled or operated by the City of Los Angeles, the charge to vessels for dockage at such wharf, pier, dock, quay, slip or landing shall be as follows, to-wit:

1. Vessels under ten tons, net registered tonnage, ex-

empt.

2. For vessels of ten tons and upwards and not exceeding 50 tons, net registered tonnage, 2 cents a net registered ton.

For vessels of 51 tons and upwards, and not exceed-

ing 100 tons, net registered tonnage, \$2.

4. For vessels of 101 tons and upwards, not exceeding 150 tons, net registered tonnage, \$3.

For vessels of 151 tons and upwards, and not exceeding 200 tons, net registered tonnage, \$4.

For vessels of 201 tons and upwards, and not exceed-

ing 300 tons, net registered tonnage, \$5.

7. For vessele of 201 For vessels of 301 tons and upwards, and not ex-

ceeding 400 tons, net registered tonnage, \$6. 8. For vessels of 401 tons and upwards, and not exceed-

ing 500 tons, net registered tonnage, \$7. 9. For vessels of 501 tons and upwards, and not exceeding 600 tons, net registered tonnage, \$8.

10. For vessels of 601 tons and upwards, and not ex-

ceeding 700 tons, net registered tonnage, \$9. 11. For vessels of 701 tons and upwards, and not ex-

ceeding 800 tons, net registered tonnage, \$10.

12. For vessels of 801 tons and upwards, and not ex-

ceeding 1,000 tons, net registered tonnage, \$11.

13. For vessels of 1,001 tons and upwards, and not ex-

14. For vessels of 1,201 tons and upwards, and not exceeding 1,500 tons, net registered tonnage, \$12.

15. For vessels of 1,201 tons and upwards, and not exceeding 1,500 tons, net registered tonnage, \$13.

16. For vessels of 1,501 tons and upwards, and not exceeding 1,500 tons and upwards, and not exceeding 1,501 tons and upwards, and not exceeding 1,501 tons and upwards, and not exceeding 1,200 tons.

ceeding 1,800 tons, net registered tonnage, \$14. 16. For vessels of 1,801 tons and upward, and not ex-

ceeding 2,100 tons, net registered tonnage, \$15.

17. For each ton over 2,100 tons, net registered tonnage, one-half cent per net registered ton.

Said rates or dockage shall be for each day of twentyfour (24) hours, provided that a proportionate amount shall be collected for fractions thereof, with a minimum charge of thirty-three and one-third per cent (331/3%) of one day's dockage for vessels engaged in coastwise trade, and a minimum of one full day's dockage for vessels engaged in foreign trade; provided, however, the provisions of this section shall not apply to any vessel, operated exclusively as a police or fire boat at Los Angeles Harbor, nor to any vessel while the same is actually engaged in police or fire service in said harbor, or in patrolling said harbor for either of such purposes, and may be waived for government vessels.

Provided that the dockage charges for yachts and other pleasure craft, and for vessels lying at dock not in commission or awaiting charter or undergoing repairs when without cargo, shall be one-half of the rates herein specified, but the City of Los Angeles reserves the right to order any such yacht, pleasure craft or vessel away from any wharf, and cause the same

to be removed wholly at the risk and expense of the owner or operator of said vessel, at any time such wharf may be needed for commercial purposes.

And provided further, that no dockage shall be charged for ferry boats, operating under a franchise granted by the City of Los Angeles or other competent authority, docking at a ferry landing of the City of Los Angeles.

The term "dockage" as used in this order, shall be held to mean the privilege of mooring or making fast

to a wharf, pier, dock, quay or landing.

Storage: Sec. 4. The rates or charges for storage Storage: Sec. 4. The rates or charges for storage space, and for warehousing or storage, in any warehouse of the City of Los Angeles, or in any freight shed, transit shed or wharf shed of the City of Los Angeles wherein space for storage purposes may be set apart by the Board of Harbor Commissioners, shall be as follows:

1. For less than 300 square feet, 6 cents per square foot per month, no charge to be less than \$3 per

month.

2. For 300 square feet and upwards, and less than 500 square feet, 5 cents per square foot per month, no charge to be less than \$18 per month.

For 500 square feet and upwards, and less than 1,000 square feet, 4 cents per square foot per month, no charge to be less than \$25 per month.

4. For 1,000 square feet and upwards, and less than 2,000 square feet, 3½ cents per square foot per month, no charge to be less than \$40 per month.

5. For 2,000 square feet and upwards, and less than 2,000 square feet and upwards, and less than

3,000 feet, 3 cents per square foot per month, no charge to be less than \$70 per month.

6. For 3,000 square feet and upwards, and less than 5,000 square feet, 2½ cents per square foot per month, no charge to be less than \$90 per month.

7. For 5,000 square feet and upwards, 2 cents per per square feet and upwards, 2 cents per fee

square foot per month, no charge to be less than \$125 per month

8. For warehousing merchandise not otherwise specified ten (10) cents per month per ton, weight or measurement, at the option of the City of Los Angeles.

The rates specified in this section do not include cost of handling nor insurance on merchandise. If the City of Los Angeles performs a handling service. the charges for such handling shall be actual cost plus ten (10) per cent.

#### Port Charges

Water: (Regulated by city ordinance.) Seventy-five cents for the first 500 cubic feet or less, and 9 cents for each additional 100 cubic feet. Five cents additional per thousand gallons for wharfage

Towage: (Fixed by private contract.) Gasoline tug. turning vessel in Inner Harbor, \$5; gasoline tug, towing lumber cargoes, per 1,000 feet, 15 cents; steam tug, assisting vessel in Outer Harbor, \$25. (Note: Tugs are seldom necessary for steam vessel in Los Angeles Harbor, except for turning vessels.)

Stevedoring: Rates for loading and discharging cargo, 50 cents per ton. Overtime cost per hour \$0.65 to \$1 Cost per hour for general labor, \$0.50; overtime, \$0.75. Lighterage, cost per ton, \$0.50 per ton including handling and towing. Lighterage, cost per lighter per day, \$6 to \$8.

#### Public and Private Wharves

City wharves-35-foot channel, Accommodations: Accommodations: City wharves—35-foot channel, 2880 lineal feet with depth at wharf of 35 feet or over. On 30 foot channel, 1915 lineal feet with depth at wharf of 30 feet or over; 5745 lineal feet with depth at wharf of 25 to 30 feet; 330 lineal feet with depth at wharf of 20 to 25 feet; 955 lineal feet with depth at wharf of 10 to 20 feet. On 20-foot channel, 540 lineal feet with depth at wharf of 20 feet or over; 90 lineal feet with depth at wharf of 15 to 20 feet. On 12-foot channel 1505 lineal feet with depth at wharf of 12 feet nel 1505 lineal feet with depth at wharf of 12 feet or over. Private wharves—On 35-foot channel 1275 lineal feet with depth at wharf of 35 feet or over:

2895 lineal feet with depth at wharf of 30 to 35 feet. 2895 lineal feet with depth at wharf of 30 to 35 feet. On 30-foot channel 3370 lineal feet with depth at wharf of 30 feet or over; 12,960 lineal feet with depth at wharf of 25 to 30 feet; 825 lineal feet with depth at wharf of 20 to 30 feet; 155 lineal feet with depth at wharf of 10 to 15 feet. On 20-foot channel, 500 lineal feet with depth at wharf of 15 to 20 feet.

#### Importers and Exporters

American Trona Corporation, 366 Pac. Elec. Bldg.; J. K. Armsby Company, 516 San Fernando Bldg.; Angelus Sanitary Can Machine Co., 310 N. Ave. 19; Axelson Machine Co. Box 316, Boyle Ave. & Randolph; Axelson Machine Co. Box 316, Boyle Ave. & Randolph; Baker Iron Works, 948 N. Broadway; Bishop & Company, 7th & Alameda Sts.; Blake, Moffit & Towne, Whl. paper, 242 S. Los Angeles St.; Braun Corporation, 363 New High St.; Brininstool Co., Mateo & Palmetto Sts.; Cal. Portland Cement Co., 401 American Bank Bldg.; Channel Commercial Co., Whlse. grocers, Bank Bldg.; Channel Commercial Co., Whlse. grocers, 1st & Vignes; California Walnut Growers Assn., 823 Traction Ave.; Cohn-Goldwater & Co., Mfg. Men's Furn. goods, 216 S. Los Angeles St.; Cooper, Coate & Casey Dry Goods Co., 700 S. Los Angeles St.; Curtis Olive Co., olives and olive oil, 503 Chamber of Commerce Bldg.; Germain Seed & Plant Co., 330 S. Main St.; Globe Grain & Milling Co., 925 E. 3rd St.; Golden State Portland Cement Co., Henne Bldg.; Hamilton & Henderson, 633 Central Bldg.; Hauser Packing Co., 9th and Mateo Sts.; S. L. Kreider, steamship freight broker. Henderson, 633 Central Bldg.; Hauser Packing Co., 9th and Mateo Sts.; S. L. Kreider, steamship freight broker, 382 P. E. Bldg.; Llewellyn Iron Works, 1100 N. Main St.; Los Angeles Olive Growers Assn., 522 Higgins Bldg.; Los Angeles Brewing Co., 1920 N. Main St.; Los Angeles Soap Co., 633 E. 1st St.; Mathews Candy Co., 413 Wall St.; Mathie Brewing Co., 1834 N. Main St.; Moreland Motor Truck Co., 1701 N. Main St.; Pioneer Paper Co., 247 Los Angeles St.; Riverside Portland Cement Co., 640 Title Insurance Bldg.; Standard Felt Co.. West Alhambra, Cal.; Sperry Flour Co., 1615 E. 7th St.; Universal Sales Co., Room 405, 257 S. Spring St.; Western Wholesale Drug Co., 2nd and Los Angeles Sts.; Western Metals Co., 625 Security Bldg.; Layne & Bowler Corp., 900 Santa Fe St.

#### Steamer Lines for South America, Central America and Mexico

Gulf Mail Steamship Co., American steamers. O. H. D. & W. Co. wharf, Sailings for West Coast of Mexico and Central and South America. Passengers

and freight.

Toyo Kisen Kaisha, 400 South Spring St. Japanese steamers. O. H. D. & W. Co. wharf. Sailings for Mexico and South America as far south as Valparaiso.

monthly. Passengers and freight.

Pacific Mail Steamship Co. (M. F. McLawrin, agent), Merchants National Bank Building. American steamers. Sailings for West Coast as far south as Balboa, every ten days. Passengers and freight. O. H. D. & W. Co. wharf.

Pan American Line: Freight only. Central American ports. Monthly sailings.

Standard Oil Company, 1727 San Fernando St. American steamers. Municipal Standard Oil wharf. Sailings, irregular, but frequent to South America. Oil.

Union Oil Co., Union Oil Bldg. American steamers. Breakwater Oil wharf. Sailings irregular but frequent for South America. Oil.

South America. Pacific Line Rolph Mills & Co. steamers. Sailings for West Coast as far south as

South America Pacific Line, Rolph, Mills & Co., agents, American Bank Bldg. Norwegian steamers. Sailings twice a month to coast ports of South America.

General Petroleum Co., Higgins Bldg. American steamers. Breakwater Oil wharf. Sailings for West Coast of South America every 40 days. Oil,

#### For Europe

Harrison Direct Line (Balfour, Guthrie & Co., agents), Higgins Bldg. British steamers. O. H. D. & W. Co. Sailings for Antwerp, Liverpool, London and Glasgow, via all Northern Pacific ports, every 28 days. Freight. Temporarily suspended.

East Asiatic Co. Ltd., Higgins Bldg. Danish steamers. O. H. D. & W. Co. wharf. Sailings for Copenhagen and North European ports. Freight. Temporarily suspended.

#### For Atlantic Coast

American-Hawaiian S. S. Co. (Panama-Pacific Line), Merchants National Bank Bldg. American steamers. Municipal Pier A. Sailings for Charleston, New York and Boston, via all North Pacific main ports. Freight, Service temporarily suspended. nassengers

Panama - Pacific Line (International Mercantile Marine Co.) (G. N. Koeppel, general agent), 607 South Spring St. American steamers. Sailing for San Diego and New York, via San Francisco. Freight, passengers. Sailings temporarily suspended.

Luckenbach S. S. Co., Central Bldg. American steamers. Pacific Wharf and Storage Co. wharf. Sailings for New York and Gulf and Atlantic ports. Freight. Sailings temporarily suspended.

Atlantic and Pacific Line (W. R. Grace & Co.),
Merchants National Bank Bldg. American steamers.
Pacific Wharf & Storage Co. wharf. Sailings for New
York and Atlantic ports, via Puget Sound and San
Francisco. Freight. Sailings temporarily suspended.
General Petroleum Co., Higgins Bldg. American
steamers. Breakwater Oil wharf. Sailings for British
and Dutch West Indies in oil trade.

and Dutch West Indies in oil trade.

#### For the Orient

General Petroleum Co., Higgins Bldg. American steamers. Breakwater Oil wharf. Sailings for Asiatic ports every 60 days. Oil.

Los Angeles Pacific Navigation Co.: Freight only. American steamers. All principal ports of call.

#### For Domestic Ports

The San Francisco & Portland Steamship Co.: Freight and passengers. Sailings every sixth day from San Pedro for San Francisco, Calif., and Astoria and Portland, Ore.

Pacific Steamship Co.: Freight and passengers. Sailings every fourth day from San Pedro to all north pacific Coast ports and Alaska.

#### Consular Representatives in Los Angeles

Secretary of Consular Society: E. J. Louis, 635 I. W.

Hellman Bldg., F2217.
Belgium: Vice Consul Chas. Winsel, 211 South Main Belgium: St. A3032.

British: Consul C. White Mortimer, 704 International Bank Bldg. A1209.
Costa Rica: Consul C. E. Bobertz, 382 Pacific Electric Bldg. F2344.
Cuba: Consul Dr. Jose S. Saens, 947 Grattan St.

54933.

Denmark: Vice Consul Wm. R. Spendrup, 215 H. W. Hellman Bldg. A2516.
France: Consular Agent Louis Sentous, Jr., 404 Equitable Bank Bldg. A1954.
Guatemala: Vice Consul C. E. Bobertz, 382 Pacific Electric Bldg. F2344.
Honduras: Consul Robert E. Tracey, 700 South Los Angeles St. 10333.
Italy: Consular Agent G. Diuma 608 San Fernando.

Italy: Consular Agent G. Piuma, 608 San Fernando St. A5532.

Consul Ujiro Oyama, 710 International Bank Japan: Bldg. F7254.

Mexico: Emilio Salinas, 616 American Bank Bldg. 67227.

Netherlands: Vice Consul F. J. Zeehandelaar, Wilcox Bldg. A2418.

Commerce Bldg. Main 2685.
Norway: Vice Consul Geo. M. Ottis, 517 Grosse Bldg. F6098. Nicaragua: Consul John C. Allen, 642 Chamber of

Paraguay: Vice Consul Otis B. Goodwin.
Peru: Consul Elmer F. Mackusick, 364 Pacific Elecric Bldg. Vice Consul E. J. Louis, 635 I. W. Hellman Bldg. F2217.

Salvador: Charge d'Affairs Robert E. Tracey, 700 South Los Angeles St. 10333. Consul Rafael Lima. Spain: Vice Consul Dr. Louis F. Alvarez, 211 West

First Street, Broadway 2245.
Sweden: Vice Consul Gottlieb Eckdahl, 424 Marsh-Strong Bldg. A5458.

#### Federal Offices

Commissioner, 522 Federal Bldg. Attorney, 422 Federal Bldg. Marshal, 412 Federal Bldg. Appraisers Stores, 343 New High St Civil Service Commission, 618 Federal Bldg.

Customs House, 314 Federal Bldg.
Department of Agriculture, Bureau of Animal Industry, 504 Federal Bldg.

Department of Agriculture, Irrigation Investigations, 601 Federal Bldg.
Department of Agriculture, Sugar Beet Investiga-

tions, 622 Federal Bldg.

Department of Agriculture, Sugar Beet Investigations, 622 Federal Bldg.

Department of Agriculture, Citrus By-products Laboratory, 142 S. Anderson St.

Department of Justice, 615 Federal Bldg.
Engineer Office, 723 Central Bldg.
Forest Service, 625 Federal Bldg.
Geological Survey, 619 Federal Bldg.
Immigration Service, 509 Federal Bldg.
Indian Service, 526 Federal Bldg.
Internal Revenue, 307 Federal Bldg.
Land Office, 508 Federal Bldg.
Marine Corps Recruiting Station, 106 Central Bldg.
Mineral Surveyor, 215 Stimson Bldg.
Naturalization Service, 613 Federal Bldg.
Navy Recruiting Station, Union Oil Bldg.
Pension Bureau, 526 Federal Bldg.
Postoffice Inspectors, 319 Federal Bldg.
Public Health Service, 543 Wilcox Bldg.
Reclamation Service, 605 Federal Bldg.
Railway Mail Service, 633-36 Federal Bldg.
Referee in Bankruptcy, 834 H. W. Hellman Bldg.
Treasury Department, 502 Federal Bldg.
Secret Service, 329 Federal Bldg.

Secret Service, 329 Federal Bldg. Weather Bureau, 833 Central Bldg. Interstate Commerce Commission, 620 Federal Bldg. Inspector of Hulls and Boilers, San Pedro District, State Bank Bldg.

Fortifications and Reservation, San Pedro District,

26th and Pacific. Federal Building is located at corner of Temple and Spring Sts.

# **MACASSAR** Island of Celebes, Dutch East Indies

Position: Latitude equator, longitude 105 degrees east. Population: 40,000 inhabitants (1,200 Europeans).
Pilotage: Compulsory, f. 2.50 under 500 cubic metres;
f. 5 under 1,500 cubic metres; fs. 1 for every 1,000 cubic

Port Charges: Duty ad valorem on uncultivated produce. Harbor dues, f. 0.015 per gross register ton of 2.83 metres per diem. Wharfage, f. 0.01 per cubic metre per diem, net measurement. Letting off and fastening lines, f. 7.50 per steamer.

Stevedoring: Rates for loading cargo, f. 1.30 per last. Rates for discharging cargo, f. 1.50 per last. Accommodation: Old wharf 510 metres; new wharf 1.340 metres; depth of water, at least 8.20 metres. Imports: Piece goods (cotton, shirtings, etc.), ironware, rough and dry goods and produce for transit.

Exports: Copra, gum copal, coffee, rice, rattan, shells and other sorts of native produce.

Names of Importing and Exporting Firms: Michael Stephens & Co., Mooraux & Co., Manders, Seemann & Co., Stephens & Gregory, Reiss & Co., Schmid en Jean del S. Co.

Steamer Lines Using the Port: Koninklyke Paketvaart Maatschappy (only for Dutch East Indies and Australia). "Ocean" (Liverpool, Amsterdam), Nanyo Yusen Kaisha Ltd. (Japan), Osaka Yusen Kaisha (Japan), M'py Nederland, Rotterdamsche Lloyd, Nederland Amerika Line, Java-China-Japan Line.

Consular Representation: England, France, Belgium, United States (William Johannas Schepper, agent), Portu-

gal. Norway and Germany.

# **MAHUKONA** Hawaiian Islands

Mahukona is the principal port on the west coast of the Island of Hawaii. It has no breakwater or harbor, and is a very exposed port, particularly in the winter season when the "Kona" storms rage.

when the "Kona" storms rage.

Anchorage is afforded by means of mooring buoys placed there by the Inter-Island Steam Navigation Company.

About the only vessels calling there regularly are those when the Matter I incompany. of the Inter-Island fleet, although the Matson Line maintains a freight service from San Francisco with the motor schooners R. P. Rithet and Annie Johnson.

Edward Madden is deputy collector of customs. There is no harbor master or pilot.

# **MANILA** Philippine Islands

Position: Latitude 15 degrees north, longitude 121 degrees east.

Population: 234,500.

Pilotage: Not compulsory, P25 between sunrise and

sunset; P50 between sunset and sunrise.
Port Charges: Tonnage or wharf dues, 12½ cents P. I. Cy. per net registered ton, or 35 cents per 1,000 kilos on merchandise loaded and/or discharged at ship's option. Customs, stamps on manifest and bill of health P9; if with passengers, P10. Light dues, none. Other charges, government piers if used, 1 cent per net registered ton per 24 hours or part thereof.

Stevedoring: Rates for loading and discharging cargo, 23 cents per ton plus 25 per cent. Overtime cost per hour, P25 per gang per night. Cost per hour for general labor, P1.75 per man per day. Lighterage, cost per ton, P2.50 per ton. Lighterage, cost per lighter per day, P30/60

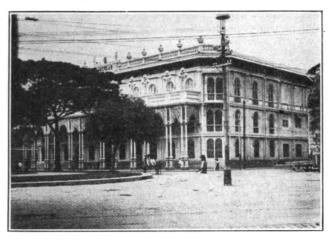
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according to size.

Accommodation: Pier No. 1 reserved for Quartermaster Department only. Wharf No. 2 to be constructed. Pier No. 3, length 600 feet; neap tides 30 feet, spring 32 feet, at each side of pier. Wharf No. 4, in course of construction, length 750 feet. Space between pier Nos. 3 and 5 running north and south (sea wall) present depth 18 feet neap; will probably be dredged to 28/30 feet. Pier 5 length 650 feet, neap 30 feet, spring 32 feet, at each side



Packing Cigarettes in Manila



Alhambra Cigar Factory

of pier. Buoys: Government buoy used exclusively for government vessels, except in case of emergency; depth of water 28/30 feet. Spanish Mail and Blue Funnel buoys available to outside ships provided no vessel of either line in port; 28/30 feet. Indo-China S. N. Co. Ltd. and China Nav. Co. Ltd., buoys are available to outside steamers up to 2,000 tons provided no steamer of either line in port; depth 21/22 feet.

General merchandise and finished products principally piece goods, coal, petroleum, gasoline, machinery, drugs, clocks, jewelry, iron.

Exports: Hemp, copra, sugar, maguey, cocoanut oil, tobacco (raw), cigars, sapan wood, leather, dye woods, woods, mother of pearl, tortoise shell, hats and em-

Names of Importing and Exporting Firms: Smith, Bell & Co. Ltd., W. F. Stevenson & Co. Ltd., Ker & Co., Pacific Commercial Co. Warner, Barnes & Co., Ltd., Compania General de Tabacos de Filipinas.

Steamer Lines Using the Port: O. S. S. Co. Ltd., Java-China-Japan Line, C. M. S. N. Co., Ltd., Ellerman Bucknall, U. K. ports; C. P. O. S., Ltd., Toyo Kisen Kaisha, Pacific Mail Steamship Co., O. S. K., C. N. Co., Ltd., and Indo-China S. N. Co., Ltd., Nederland & Rotterdam-Lloyd, Royal Mail Lines, N. Y. K.

Consular Representation: Argentine Republic, Belgium, Brazil, Chile, China, Denmark, France, Great Britain, Italy, Japan, Liberia, Mexico, Netherlands, Nicaragua, Norway, Peru, Portugal, Russia, Spain, Sweden, Switzerland, Turkey.

The piers and anchorages above referred to are protected from bad weather by a breakwater which runs from the mouth of the Pasig River in a semi-circle for a distance of about a mile.

## **MARSHFIELD** Oregon (Coos Bay)

Population: 7.500.

Latitude 43 degrees 21 minutes 15 seconds north, longitude 124 degrees 20 minutes 30 seconds west.

Depth of Harbor: 32 feet on Coos Bay bar, 25 feet at low water inside harbor and at wharves.

Customs Representative: W. A. Clark.

Docks, Piers and Wharves: Port of Coos Bay Dock, 150 feet long, with warehouse 50x100 feet. Ocean Dock, owned by Reynolds Development Co., 540 feet long, with warehouse 80-160 feet. Terminal Dock owned by C. A. Smith Lumber & Manufacturing Co., 1,000 feet long, with ware-house 100x266 feet. Railroad Dock, owned by Southern Pacific Ry., 70x600 feet, warehouse 60x140 feet.

Steamship Lines: Arrow Line S. S. Co., Coos Bay Eureka S. S. Co., Macleay Estate S. S. Co., C. F. Mc-

George, agent. Parr-McCormick S. S Co., Ocean Dock Terminal and Supply Company, agent. Several lumber companies have vessels calling as business offers.

Oil Docks: Standard Oil Co., wharf and warehouse.

Union Oil Co., wharf and warehouse,

List of charges: Anchorage, none. Wharfage, 20c per ton general freight. Dockage, \$4 per day. Stevedoring labor 60c, overtime 90c per hour. Cartage, 60c per ton. Towing, 50c per ton, gross tonnage. Fresh water, first 200 cubic feet, 40c per 100 cubic feet; next 300 cubic feet, 25c per 100 cubic feet; next 1,500 cubic feet, 15c per 100 cubic feet; next 20,000 cubic feet, 9c per 100 cubic feet; next 40,000 cubic feet, 6c per 10 cubic feet.

Railroad Connections: Southern Pacific Rv. from Eugene

Foundries with capacity to turn out all kinds of marine castings; two large machine shops equipped to handle all kinds of heavy marine and mill work.

Pilotage. Masters of vessels running into Coos Bay regularly do not require or use pilots, and at present have no regular licensed pilot. Captain Carl Egenhoff of the sea-going launch, "Wollverine" sometimes pilots strangers over the bar and up the bay at a very reasonable charge.

## **MAZATIAN** Mexico

Population: 20,000.

Position: Latitude 16 degrees north, longitude 129 degrees west.

Pilotage is compulsory. Each ship pays \$12.00 Mexican currency per meter of draft for entrance and an equal sum for clearance.

For dispatch Mexican currency per ton gross. For sanitary dues 2c Mexican currency per net ton. For bill of health \$5.00 Mexican currency. For clearance by captain of the port \$8.00 Mexican currency. The above applies to entrance from and clearance to foreign ports.

For vessels trading on the Mexican coast alone or entering any Mexican port after the first, the following charges are made: For entrance and clearance, each, \$12.00 per meter of draft, Mexican currency. For sanitary dues 1c per net ton, Mexican currency. For bill of health \$3.00 Mexican currency. For clearance by captain of the port \$8.00 Mexican currency.

Lighterage charges are \$3.00 per ton Mexican currency. Stevedores receive 75c Mexican currency per hour with double time for night or holiday work.

Customs agent's charges for dispatching ship, \$50.00 Mexican currency.

Launches charge \$1.00 Mexican currency each way between ship and store, for each passenger, and 50c and 25c respectively per trunk and suitcase.

There is no wharf here for the use of seagoing vessels, so that these must anchor from one to two miles from the place of landing passengers and cargo.

For loading and unloading, lighters are used which carry the goods directly to the customer's warehouse door, being packed inside from the lighters on the backs of men. At very low tide the men have to wade through the water from 100 to 200 feet from the warehouses to the lighters. Lighter service is very good when only one ship comes into port per day, but when there are two or three ships at a time it is very slow work loading or unloading. The lighters can handle about 1,000 tons in a day of 12 hours.

The imports of Mazatlan are general merchandise, mining machinery and supplies, farming implements, drugs, and various items of less importance.

The principal exports are silver and gold bullion, garbanzos (split peas), tomatoes, ores of several important kinds, ixtle fiber, sugar, fish, wax, pearls and cocoanuts.

Some of the principal importing firms are Victor Patron, Fco. Echeguren y Cia., Sucs., Antonia de la Pena, Sucs., Elorza y Cia., Carlos Fritsch, Charles Brener and Luis Reynaud.

The following countries have consular representatives in Mazatlan at the present time: United States, France, Great Britain, Spain, Honduras, Colombia, Norway, Italy and Germany.

The following transportation lines have the following

ships touching at this port:

ships touching at this port:
Gulf Mail Steamship Co. of San Francisco, San Pedro, tonnage, 457; San Gabriel, tonnage, 485.
The Mexican, Central American, Ecuador and Colombia Steamship Co., San Francisco, Cal., The General Forbes, tonnage, 2,070; The Sinaloa, tonnage, 2,070.
The Fair and Moran Co., San Francisco, Cal., The Alliance, tonnage, 679; The Costa Rica, tonnage, 1,783.
The Pacific Mail Steamship Co., San Francisco, The San Jose, tonnage 2,081 gross tons, 1,538 net tons; The San Juan, tonnage 2,076 gross tons, 1,496 net tons; The City of Para, tonnage 3,352 gross tons, 2,505 net tons; The Newport, tonnage 3,528 gross tons, 2,540 net tons.
Cia. Navegacion del Pacifico, Salina Cruz, Mexico, Peno-

Cia. Navegacion del Pacifico, Salina Cruz, Mexico, Penotepa, tonnage, 500; San Cosme, tonnage 150; Josefina, tonnage 120; Ramon Cordova, tonnage 255; Acapulco, tonnage about 255.

The Mexican Trading Co., San Francisco, The Fair-

haven, tonnage, 437.

All of these lines except the one named before the last touch at United States, Mexican and Central American ports.

## **MEDAN** Island of Sumatra, Dutch East Indies

Belawan is the port of entry. Population: 28,500. Europeans, 1,500.

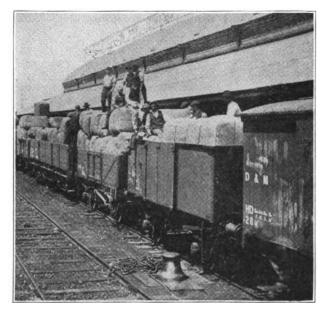
Situated on the east coast of the island, it is the chief city and capital of the government. Agriculture is the leading industry, the work being performed by imported labor. The tobacco plant produces the greatest yield, with an average production of about 41,000,000 pounds, valued at about 55,000,000 guilders. Other important items of export are rubber, coffee, copra, gambier and fish.

There is regular steamer service to Penang, Sabang,

Singapore and to ports of Java.

# **MELBOURNE** Victoria, Australia

Position: Latitude 37 degrees 49 minutes 53 seconds south, longitude 144 degrees 58 minutes 32 seconds east.



Weel Enreute to Melbeurne-Copyrighted by Underwood & Underwood

Population: Melbourne and suburbs, 708,240.

Melbourne is on the River Yarra, which falls into Hobson's Bay, at the head of Port Phillip. Distance from Liverpool by the Cape, 11,555 miles; by Suez Canal, 11.175 miles.

Vessels of 11 feet draft at ordinary tides, and frequently those of 13½ feet draft, can ascend as far as Melbourne. Above that draft and up to 24 feet, they discharge and load alongside the pier in Hobson's Bay, where there is good holding ground of soft mud. The depth in the bay is three to five fathoms. Southerly gales sometimes send in sufficient sea to interrupt traffic.

Geelong stands at the head of an inlet on the west side of Port Phillip, about 46 miles southwest of Melbourne. The harbor is well sheltered, and the Hopetown channel will admit vessels drawing 22 feet of water, and by choosing a proper time of tide vessels drawing 24 feet of water can pass through.

The least depth of water in the fairway channel to Port

Phillip is 27 feet.

Within the port of Melbourne, including Port Mel-bourne and Williamstown, there is wharfage accommoda-tion for 85 vessels of different sizes and draft of water to lay safely afloat, each having a quay berth at the same time, where cargo may be discharged according to its nature at the rate of from 60 to 200 tons per diem. sels calling at Melbourne discharge and load general cargo at the railway pier, Port Melbourne, or proceed up the river to the Victoria docks. Wheat ships load at Williamstown pier or, at Geelong.

Melbourne, 36 vessels, ranging from 100 to 3,000 tons; greatest draft of water 20 feet.

Port Melbourne, 10 vessels, ranging from 100 to 3,000 tons; greatest draft of water, 19 feet.

Melbourne & Hobson's railway pier, 15 vessels, ranging from 100 to 2,000 tons; greatest draft of water, 26 feet.

Williamstown railway piers, 18 vessels, ranging from 1,000 to 2,000 tons; greatest draft of water, 26 feet.

Williamstown pier, 4 vessels, ranging from 100 to 200 tons; greatest draft of water, 14 feet.

Total wharfage available for shipping, 38,300 feet. Construction of floating dock has been approved.

There are two patent slips and a floating dock in Hobson's Bay, and two graving docks on the south bank of the Yarra. Vessels of 2,000 tons and under can have every description of repairs, above or under water, promptly effected.

Commissions: On freight or charter procured for vessels, and freight or passage money collected, 5 per cent. On freight paid at port of departure, 21/2 per cent. On ship's disbursements and outfits, when not in funds, 5 per cent; same, when in funds, 2½ per cent.

Interest: On advances for duty, freight and lighterage,

and on accounts current per annum, 10 per cent.

Pilotage: Compulsory. Sea to bay 2½d. per ton on net regular tonnage up to 5,000 tons; then 1d. per ton for each additional ton. Minimum, £2/10/-. River pilotage, 5%d. per ton with maximum of £3/10/- and a minimum of £1. For sailers, 4½d. per net regular ton (inwards or outwards).

Port Charges: Tonnage rates (or wharf dues), 1/2d. per ton gross per day (oversea), 34d per ton gross per day (interstate). Light dues (called tonnage dues), 6d per ton levied every six months, Customs, clearance in or out £5:5 (in ballast) in or out £2:2. Berthage, ½d. per ton per day gross regular.

Stevedoring: Rates for loading cargo, 1/6 to 3/10 per ton. Rates for discharging cargo, 1/4½ to 4/6 per ton. Overtime cost per hour, 2/10½ to 4/- per hour. Cost per hour for general labor, 2/- to 2/3 per hour. Lighterage, cost per ton, 4/-. Lighterage, cost per lighter per day, £4:4:0.

Rent of Wharf Sheds: £14 for first day out and 10/for each subsequent quarter day that vessel is berthed.

Consular Representation: Consuls-General of Belgium, China, Holland, Norway, Russia; Consuls of United States (William C. Magelssen), Chile, Greece, Guatemala, Italy, Japan, Mexico, Nicaragua, Panama, Portugal, Serbia,





Yarra River and Freight Sheds-Copyrighted by Underwood & Underwood

Spain, Sweden, Switzerland, Uruguay; Vice-Consuls of France, Paraguay, Denmark and Consul-General of Ecuador.

Wharfage is charged on all goods imported or exported with the following exceptions: Firewood, goods belonging to His Majesty's government, passengers' luggage, guano, bones, bonedust, live stock.

Imports: General merchandise, drapery, tea, coffee,

tobacco, rice, oil, (mineral and vegetable).

Exports: Wheat, flour, leather, wool, tallow, frozen

Exports: Wheat, flour, leather, wool, tallow, frozen meat, butter, cheese and jam.

Names of Importers: Messrs. James Henty & Co. (general), Messrs. Banks & Co. (drapery) and Messrs.

Briscoe & Co. (ironmongery).

Names of Exporters: Messrs. John Darling & Son (wheat), Messrs. Anglis & Co. (meat), Victorian Butter Factories Co-op. Co. Ltd. (butter) and Messrs. Dalgety & Co. Ltd. (wool and produce).

Aberdeen White Star, London; Lines of Steamers: Aberdeen White Star, London; Peninsular & Oriental Steam Navigation Co., London; Orient Steam Navigation Co. Ltd., London; Australian Oriental Line, Manila and China; Commonwealth & Dominion Line, United Kingdom; Royal Packet Steam Navigation Co., Java, etc; Nippon Yusen Kaisha, Japan; Eastern & Australian Steamship Co., China; Federal & Shire Line, London; Oceanic Steam Navigation Co., Liverpool; Swedish Trans-Atlantic Line, Gothenburg. Lines of Steamers:

There are two private graving docks 520x61 feet and 430x52 feet, also one government graving dock 470x80x26 feet. These are capable of taking care of boats of all sizes used in the trade.

## MIIKE Japan

Position: Latitude 33 degrees 14 seconds north, longitude 130 degrees 23 minutes 17 seconds east.

Accommodation: Wet dock, water area, 32 acres. Depth at entrance and at dock, 28 feet at low tide; 18 feet in channel at low water. Width of dock gate, 66 feet; width of channel, 150 feet. Quay wall, 1,380 feet long has berthing space for four steamers up to 10,000 tons. Three berths for bunkering, and one for discharging general cargo and taking coke aboard. Electric coal transporter has capacity of 15,000 tons per day. Four tugs are maintained for attending large vessels without charge maintained for attending large vessels without charge.

Imports: Sugar, rice, cotton, manure.

Exports: Coal, coke, charcoal, chemicals, zinc.

## MOJI (See Shimonoseki) Japan

## **MOKPO** Chosen

Population: 13,000. Port Charges: Tonnage dues, 25 sen per regular ton.

Loading and discharging, 58 sen per ton.

Accommodation: Good harbor despite 18 foot rise and fall of tide. It is accessible to vessels not to exceed 6,000 tons. Depth at the entrance is 15 fathoms and at berth, 8 to 12 fathoms.

Imports: Cotton yarn, cotton manufactures, wood,

sugar, wheat flour.
Exports: Beans, rice, raw cotton, seaweed.

# **MONTEREY** California

Population: 6,000.
Position: Latitude 36 degrees 37 minutes 30 seconds north, longitude 121 degrees 52 minutes seconds west.

Distances: San Francisco, 125 miles by rail north, Port San Luis, 112 miles south.

Accommodation: Anchorage, safe in all storms, and 20 to 40 feet of water at wharves at low tide.

Steamship Line: Pacific S. S. Co.
Wharves: Municipal Wharf, capacity 250 tons; Associated Oil Dock, capacity 500 tons.

Railroad Connections: Southern Pacific Coast Line. Industries: Consist of fish canneries, mostly sardines.

Port Charges: Water, \$1.50 per 1,000 gallons Steve-doring labor, 50 cents per hour. Wharfage, 50 cents per ton on general merchandise; 25 cents per 1,000 feet on lumber. Cartage, 50 cents to \$1 a ton; 50 cents per ton wharfage: 11/2 cent per gross tonnage of vessel for dock-

U. S. Government is to construct a breakwater, which will make the port the most available one in California.

An independent railroad to the interior now seems assured.

Ample Wharfage and Dockage Space: 24 feet of water. A safe refuge in time of storm. No bar nor reefs. May be entered without a Government pilot in any kind of weather. Ample anchorage for ships of greatest draft.

## **MURORAN** Japan

This harbor is the third largest in Japan and is securely sheltered from storms. It is land-locked on all but the north-west side, and by reason of the great depth, the bay will accommodate any sized vessels. Vessels are moored from one-quarter to three-quarters of a mile from the town, and their freight is lightered to and from them. The population is 32,300.

Position: Latitude 42 degrees 19½ minutes north, longitude 140 degrees 57½ minutes east.

Port Charges: Harbor dues, 5 sen per net reg. ton. Beef, 12c, vegetables, 24c per pound; water, 60 sen per

Stevedoring: Ordinary cargo, 35 sen.

Accommodation: Coaling pier. Floating shearlegs for discharging weights up to 50 tons.

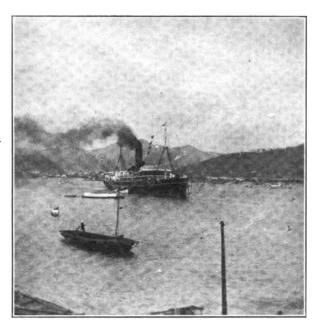
Imports: Pigiron, railway material, iron ore, nickel, machinery.

Exports: Sleepers, coal, sulphur, timber.

# **NAGASAKI**

#### Japan

Position: Latitude 32 degrees 44 minutes north, longitude 129 degrees 51 minutes east. Population: 180,000.



Nagasaki Harbor-Copyrighted by Underwood & Underwood

First port of entry from south and west. At head of an inlet three miles long and from one-half to one mile wide. Good anchorage in any of small inlets and in harbor. Good wharfage and storage facilities.

Pilotage: Not compulsory. Steamers, 20 yen, 3% additional per each foot of draft over 12 feet; 3% per every 1,000 gross tons over 1,000 tons. Sailing vessels,

Port Charges: Tonnage or wharf dues, 5 sen per ton net register. Customs, permits for Sunday and holiday, Y. 2 per hour; night work, Y. 4-6 per hour. Other charges, buoy rent, Y. 7 per day.

Stevedoring: Rates for loading and discharging cargo, 30 sen per ton. Overtime, 50 per cent extra. Cost per hour for general labor, 15 sen. Lighterage, cost per ton, 25 sen per day. Lighterage, cost per lighter per day, Y. 4 to Y. 8. Special rates for heavy lifts.

Accommodation: Open anchorage and 14 mooring buoys; minimum depth of water at low tide, 7 fathoms. Large shipbuilding yard, 150-ton hammer headed crane; 3 floating cranes.

Imports: Shipbuilding materials, machinery rails, timber, rice, oil-cokes, raw cotton, metals, kerosene.

Exports: Cargo and bunker coal, rice, cuttle-fish, dried fish, paper and general.

Names of Importing and Exporting Firms: Jardine, Matheson & Co. Ltd., Mitsubishi, Mitsui Bussan Kaisha, Holme Ringer & Co., Hassimoto & Co.

Steamer Lines Using the Port: Nippon Yusen Kaisha, Japan-European Line, Japan-Australian Line, Japan-Indian Line, Japan-New York Line, Japan-Pacific Coast U. S. A. Line, Japan-China Line, Osaka Shosen Kaisha, Japan-Pacific Coast U. S. A. Line, Japan Coasting Service, Japan-Indian Line, Japan-South American Line, Japan-Australian Line, Japan-China Korea Coasting Service; P. & O. European, Indian and China Services, Blue Funnel Line (Alfred Holt), Liverpool-China-Japan Line, Japan-Pacific Coast U. S. A., Toyo Kisen Kaisha, Japan-South American Line, Japan-Pacific Coast U. S. A. Line, Java-China-Japan Line, Glen Line, Shire Line, Ben Line, Russian Volunteer Fleet, Canadian Pacific Ocean Services Ltd., China Mail.

Consular Representation: Official British, American, (Edwin L. Neville, consul), Russian and Chinese; Merchant, Italy, Norwegian, Denmark, Belgian, Dutch, Portuguese, Swedish.

### **NAGOYA**

#### Japan

Population: 434,500.

Port Charges: None for entering harbor. Vessels Port Charges: None for entering harbor. Vessels coming inside and mooring at buoy, 3 yen for 24 hours or part thereof; ships less than 500 tons displacement 1.50 yen per 12 hours, 0.75 yen per 6 hours, 0.38 yen per 3 hours. Loading and discharging, 10 sen per ton for iron, sugar, coal; 8 sen per ton for porcelain and earthenware; 1.4 sen per ton for rice; 4.5 sen per koku for timber; 2 sen per koku for cereals.

Accommodation: One 3-ton and one 12-ton floating

crane. Depth at entrance, about 22½ feet at low water width of entrance, about 240 feet. Depth at quay and landing place for cargo, 23 feet at low water.

Imports: Soya beans, bean cake, rice, sugar, coal,

timber, manure, woollen and worsted yarns.

Exports: Woven goods, porcelain, earthenware, wood for tea boxes, lacquered ware, cotton goods. cotton yarn, matches, clocks, soya and sake.

Nagoya embraces important manufacturing industries. well known for their large output of porcelain and cloisonne ware.

## **NANKING** China

Position: Latitude 32 degrees 2 minutes north, longitude 119 degrees 25 minutes 25 seconds east.

Population: Estimated, 250,000. Port Charges: Tonnage dues, 4 tael per ton. Wharfage, 2% of duty leviable. Loading and discharging, 1/6 per man per day.

Accommodation: Depth at entrance varies from 12 to 25 and harbor is accessible to such vessels as are able to pass through the flats at the mouth of the

Imports: Grey shirtings and sheetings, cotton goods, railway material, kerosene oil, drills, sugar, metals, hardwood timber.

Exports: Silk piece goods, steel bars, cylinders and drums, skins, beans, cigarettes, tinned plates, artificial liquid indigo, machinery.

Nanking occupies the south bank of the Yangszte river,

about 235 miles from the sea.

Consular Representation: United States (J. Pavl Jamison, consul), Japan, Great Britain.

# **NELSON** New Zealand

Position: Latitude 41 degrees 15 minutes 39 seconds south, longitude 173 degrees 15 minutes 42 seconds east. Population: 8,500.

Pilotage: Compulsory. Charged inwards and outwards. Steamers, 1½d per reg. ton; sailing vessels, 6d; minimum each way in every case, £1 10s. Harbor Master's fees for removing steamer or sailing vessels within harbor, 120 tons and up, 1d per reg. ton; under 120, 10/.

Port Charges: Light dues, sailing vessels, excepting inter-colonial trading vessels and coasters, 6d; inter-colonial and all steamers, excepting coasters, 4d ton; coasting vessels, ½d ton. Charges for vessels not paying pilotage, 1/ per ton reg. upon first arrival half yearly; for vessels paying pilotage, 3½d per ton reg. upon first arrival half yearly. Berthage, ¼d per ton net reg. per day. Wharfage, according to kind of cargo.

Accommodation: Large vessels use channel cut through Boulder Bank, depth 15 feet at low water ordinary spring with accommodation of 1,533 feet; 5-ton crane; cradle for vessels to 150 tons, 130 feet long, 6<sup>1</sup>/<sub>2</sub> ft. draught.

Imports: General merchandise.

Exports: Wool, flax, gold, frozen meat, grain, hops.



# NEWCASTLE New South Wales, Australia

Position: Latitude 32 degrees 56 minutes south, longitude 151 degrees 45 minutes east.

Population: Newcastle proper 12,315; Newcastle with

suburbs 69.800.

Entrance: Newcastle entrance is easily recognized by day by a remarkable headland named "Nobby Head" in latitude 32 degrees 55 minutes 15 seconds south; longitude 151 degrees 49 minutes 15 seconds east; and on which stands a white circular lighthouse 115 feet above high water, and from it is shown a white occulting light, visible 12 seconds and obscured 3 seconds, for a distance of 17 miles.

Harbor: Newcastle harbor has been vastly improved during recent years, the entrance particularly having received special attention, both as regards deepening

and lighting.

There are now 23 feet 6 inches at low water spring tides, with the fairway towers in line (correct magnetic bearing North 42 degrees East and South 42 degrees West), which enables vessels of heavy draft to negotiate the entrance during both spring and neap tides, as the former rise average 5 feet 6 inches, and the latter 3 feet 6 inches.

Wharfage: Provision for the shipment of coal consists of 2,000 feet of wharfage, with a depth of 28 feet on the east side of the inner basin, upon which are erected six movable 25-ton hydraulic cranes, capable of loading 200 tons per hour. In addition there are 5,500 feet of wharfage on the east side of Carrington, with deep water frontage provided with 10 hydraulic cranes of from 15 to 25 tons capacity, and one McMyler hoist, capable of loading 200 tons per hour. Wharfage provided for the loading and discharging of cargoes other than coal consist of King's wharf, 3,000 feet, depth of water 25 feet L. W. S., and Lee wharf, 1,200 feet with a depth of water 30 feet L. W. S., upon which are cargo sheds. All wharfage of the port is connected with the

sheds. All whartage of the port is connected with the main railway system of the state.

Twenty-four hundred feet of coal-loading wharfage is now under construction, half of which is nearing

completion.

Six electric cranes with a lifting height of 70 feet are ordered for this wharfage.

#### Steamers Calling for Bunkers Only

Pilotage: Compulsory. Inward, 1¼d. per ton; outward, 1¼d. per ton. Maximum, £25. Removals: 1500 tons and over £4/10/- (maximum) each.

Port Charges: Tonnage dues, ½d. per ton per day on gross register, payable every quarter of a day. No State Harbor and Light Rates are payable.

#### Discharging or Loading Coal

Pilotage:  $2\frac{1}{2}$ d. per ton on net. reg.: maximum, £25, inwards or outwards. Removals, 1500 tons and over, £4/10/- maximum each. Tonnage dues are payable on gross reg. tonnage at  $\frac{1}{2}$ d. per ton per day, payable every quarter of a day. Towage, £5 for one tug, and £9 for two tugs, and £1 extra if overtime required. Boatmen, charge for running lines,  $\frac{10}{2}$ - per shift. If two men are required, £1 is charged. Trimming rates,  $\frac{10}{2}$ d. for bunkers only;  $\frac{5}{2}$ d. for full cargo and bunker. Any wheeling to be done is charged extra. State harbor and light rates are payable 4d. per ton on net reg. once in every 6 months in one port only in New South Wales.

Accommodation: Depth of water on bar neap tides 27 feet, spring tides 29 feet. Alongside docks 28 and

30 feet

Imports: Lumber, manufactured goods, hardware, glass and earthenware.

Export: Coal, coke, copper, wool, tallow, hides.
Names of Importing and Exporting Firms: D. Cohen & Co., Frederick Ash Ltd., Caledonian Collieries, Abermain Collieries, Wallsend Collieries, West Wallsend.

Steamer Lines Using the Port: Adelaide S. S. Co. Ltd., Australian ports; Australian S. S. Co. Ltd., Australian ports; Union S. S. Co., Australian and American ports.

Loading or unloading redwood or Oregon pine 3/6 per 100 feet. B. M., case oil 2/2 per ton, 22 cases constituting a ton. Storage charges 1/- per ton after 48 hours. United States Consul: Lucien N. Sullivan.

## NEWCHWANG Manchuria

Yingkow is now the port owing to silting of the coast. Position: Latitude 40 degrees 40 minutes 38 seconds north, longitude 122 degrees 15 minutes 30 seconds east. Population: 80,000.

Pilotage: Not compulsory, inwards, steamers, 3 to 4 taels per foot; sailing vessels, 4 to 5 taels per foot; outwards, steamers, 4 taels; sailing vessels, 5 taels per foot. All charges plus 25% surfax.

foot. All charges plus 25% surtax.

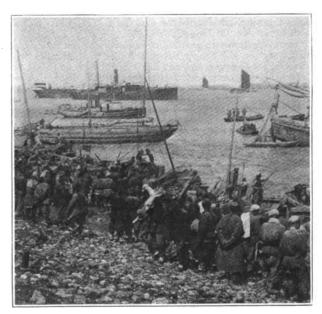
Pert charges: No local. Tonnage dues are the same as Canton.

Accommodation: From December to March the port is closed on account of ice. Depth on bar at low water spring tide 7 feet; spring rise, 12½ feet; neap 8½ feet. Deep anchorage, about one-half mile from the town. There are buoys in the River Liao for all the passage up to the harbor.

Imports: Matches, metals, sugar, cotton, kerosene, cotton goods, woollen goods, aniline dyes, artificial indigo.

Exports: Coal, bristles, beans, bean oil, bean cake, tobacco, wild silk, millet, sesame.

Newchwang is located in the province of Fengtien, about 13 miles from the mouth of the Liao River, and navigation on the river generally is closed from December to March. This fact, however, does not interfere with the commercial activities of the port, such a situation being relieved by railway communication supplied by branches of the South Manchurian Railway and the Government Railways of North China. There is daily communication with Peking, Tientsin, Mukden, Dairen, Port Arthur, Tiehling and Kuanchengtze. The Chinese government Railway maintains a station on the north side of the river, and the South Manchurian station is on the south side one mile from the Custom House. The country surrounding Newchwang is flat. The climate



Newchwang Harber-Copyrighted by Underwood & Underwood

is not extreme, the summers being mild and though the weather becomes severe in the winter, the tempera-ture rarely falls farther than 15 degrees below zero.

Beans, millet, maize and their by-products represent the principal articles of exportation, and more recently the principal articles of exportation, and more recently steps have been taken looking toward the exploitation of Fushan coal. Minor exports include native medicines, wild and refuse silk, skins, and fur, and ginseng. There is a project pending for the dredging of the bar at the mouth of the Liao river and other improvements for the facilitation of water transportation.

Consular Representation: United States, Denmark, Great Britain, Japan, Netherlands, Norway, Russia.

Sweden, France (consul residing at Mukden).

# **NEW PLYMOUTH**

New Zealand

Population: 5.283.

Position: Latitude 39 degrees 4 minutes south, longitude 174 degrees 5 minutes east.

This port is the outlet for the dairving and butter producing district of the North Island.

Pilotage: Sailing vessels, inwards and outwards, 3d per ton reg.; steamers, 1½d.

Port charges: 4d per ton reg., payable half yearly. Wharfage, 2/ per ton. Water, 5/ per 1,000 gallons. Labor, 1/6 per hour. Railway carriage from wharf to town, 3/. Accommodation: The harbor is not the best. Break-

water harbor for ships up to 2,000 tons. Anchorage in 8 to 9 fathoms, 1 to 1½ mile offshore. Wooden wharf, 1,000 feet long. Five-ton crane. Wharf accommodation, 2.000

Imports: Coal, general.

Exports: Butter, cheese, frozen meat, wool.

## **NEW WESTMINSTER British Columbia**

Latitude 49 degrees north, longitude 123 degrees east. Population: 15,000.

Pilotage: Not compulsory.

Port Charges: Customs, \$1 for clearance of vessels to foreign destination.

Imports: Machinery, boiler plates, dry goods, vege-tables, hardware, flour, feed, engines, wines and spirits. tovs.

Exports: Lumber, fish, vegetables, ore.

Importing and Exporting Firms: Canadian Western Lumber Co. Ltd., Dominian Products Ltd., T. H. Smith Co., Cunningham Hardware Co., T. J. Trapp & Co. Ltd.,

Brackman Ker Milling Co.

New Westminster Harbor is situated a dozen miles from salt water on the Fraser River, and less than 20 miles from the Gulf of Georgia; the city has a population of 15,000, and is the market center of a rich agricultural district, where fruit growing and miscellaneous farming is the principal industry of some 70,000 people The salmon fishing is another important industry, there being 30 canneries between the city and the mouth of the Fraser. The city is also the center of the lumber industry of the coast, there being amongst other large mills, that of the Fraser Mills, which is probably the largest in the world. Some 80 industries of various character make employment for one-fifth of the city's population and provide an annual wage output of over \$3,000,000.

# **NIIGATA**

#### Japan

Position: Latitude 37 degrees 55 minutes north, longitude 139 degrees 3 minutes east.

Population: 64,379.

Accommodation: It is necessary for vessels above 300 tons to anchor one-half mile to one mile offshore (outside of projecting banks). Improvements are under way.

Port Charges: Tonnage dues, 5c per ton; 15c freeing vessels for one year. Loading, 46c per ton; discharging

by lighter, 55c per ton.
Imports: Sugar, oil cake, phosphorite, metal manufactures, salted fish, woven goods, rice, beans, wheat

Exports: Sulphuric acid, rice, sov. metal, wooden manufactures

Niigata is situated on the western coast of the Province of Echigo, main island of Japan.



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## **NINGPO** China

On Yung river about 12 miles from the mouth. The distance to Shanghai is 140 miles. Position, latitude 29 degrees 55 minutes north, longitude 121 degrees 30 minutes east.

Population: 240,000.
Pilotage: \$6.00 per foot from Square Island, and vice versa.

Port Charges: Tonnage dues, 28c per ton for vessels over 150 tons. Other charges same as Shanghai.

Accommodation: Harbor will admit vessels drawing

17 feet at half spring tide. Depth at quays, 20 feet. Spring rise, 12 feet.

Imports: Cotton and woolen goods, dried fruits.

Exports: Tea, medicines, fish, silk, rush mats, inlaid furniture, stone, beans, raw cotton.

## **NOME** Alaska

Latitude 64 degrees 30 minutes north, longitude 165 degrees west.

Distance from Seattle, 2,372 miles.

Population (summer), 2,700.

Harbor: Located on Seward peninsula in Bering sea, and open to navigation but five months of the year. Headquarters for mining camps. Connected with United States by cable and wireless.

# NORTH BEND (Coos Bay) Oregon

Latitude, 43 degrees 25 minutes north, longitude 124 degrees 13 minutes west.

Population: 4,000.

Pilotage: Not compulsory.

Port charges: Tonnage or wharfage dues, \$2.50 minimum charge for docking vessel. No anchorage. Other charges: Water, by meter. Towing, 50c per ton gross tonnage. Wharfage, 20c per ton general freight, Cartage, 50c per ton.

Stevedoring: Rates for loading or discharging cargo. 15c a ton. Cost per hour for general labor, 80c per hour. Overtime cost per hour, \$1.10 per hour. Lighterage, cost per ton, no established price. Lighterage, cost

per lighter per day, \$10 per day.

Accommodation: There is a total of about 2,740 feet dock frontage in the city divided as follows: Municipal dock, 1,040 feet with a depth of 18 feet at mean lower low water; Bay Park Mill Dock, 500 feet with a depth of 18 feet at mean lower low water; Clarke & Calligan Box Factory Dock, 200 feet with a depth of 18 feet at mean lower low water; North Bend Mill & Lumber Company's Dock, 500 feet with a depth of 18 feet at mean lower low water; Buehner Lumber Co.'s Dock, 500 feet with a depth of 19 feet at mean lower low water.

Imports: General merchandise, flour, hay, grain, vegetables, fruit, dairy products, oil, gasoline, brick, cement, machinery, iron, lumber.

Exports: Lumber, lcgs, coal, lumber products, dairy

products, animal products, farm products, fish, cascara

bark, wooden vessels.

Importing und Exporting Firms: Buehner Lumber Co., North Bend Mill & Lumber Co., Kruse & Banks Shipbuilding Co., North Bend Iron Works, Bay Park Lumber Co., Clark & Calligan Box Factory, Sunrise Milk Products Cc.

Steamer Lines using the Port: Pacific S. S. Co., Parr-McCormick, operating between Portland and San Francisco and calling at Coos Bay and Eureka; Arrow Line, operating between Coos Bay and San Francisco; Buehner Lumber Co.'s Line, operating between North Bend and San Francisco, McCollum & Painter. Steamship

Shipyards: Kruse & Banks.

Customs Representative: W. A. Clark.

The city has asked for the extension of the Pier Head Harbor Line fronting the Municipal Dock 220 feet outward, and as soon as this extension is granted the city contemplates extending the Municipal Dock out to the new line, which will give a depth of 24 feet of water at mean lower low water along the entire front of the Municipal Dock. The Municipal Dock after this improvement is completed will contain over 200,000 square feet of dock room.

The Government Engineers report that the depth of water on the Coos Bay bar now exceeds 30 feet at mean lower low water, and dredging operations by the Government bar dredge "Michie" are still in progress and will be continued until a much greater depth is ob-

tained.

The recent adoption of the 22-foot inner harbor project by the Government with an ample appropriation for the carrying out of the improvement, will insure a 22 foot depth water at lower low water from the bar to the head of the bay—a distance of nearly 15 miles. The channel will have a mean width of 300 feet with a wide turning basin fronting this city and Marshfield. It is expected that work on this improvement will commence this year.

Railroad Connection: Southern Pacific Railway is now completed and in operation from Eugene, giving Coos Bay direct connection with transcontinental lines.

## **OAKLAND** California

Population: City, 285,000; community, 500,000. Harbor: Latitude, 37 degrees 48 minutes 5 seconds north, longitude, 122 degrees 16 minutes 38 seconds

Depth of Inner Harbor: Channel 500 feet wide with depth of 30 feet at low tide from entrance at S. P.-W. P. moles to Webster St. drawbridge.

Channel 500 feet wide with depth of 30 feet at low tide from draw bridge to mouth of Brooklyn Basin. Channel 300 feet wide, 25 feet deep at low tide around

both sides of Government Island in Brooklyn basin to Tidal canal entrance.

Channel 300 feet wide, 18 feet deep at low tide in

Tidal canal to San Leandro Bay.

Depth of Outer Harbor: Channel 300 feet wide,

25 feet deep at low tide, dredged from point between Key Route Pier and Southern Pacific Long Wharf easterly to Albers Bros. Milling Co.; turning basin, 30 feet deep at low water; channel thence northerly, 180 feet wide, 30 feet deep at low tide, to Union Construction Co., and Key Route pier, this section to be widened to 360 feet in 1919.

Harbor engineer, K. S. Heck, City Hall; Wharfinger, Wm. J. Masterson, 1st and Wahington Streets.

Government Officials: Collector of Customs. Davis; deputy in charge of sub-port of Oakland, Charles A. Kelly, Postoffice Bldg.

Steamship lines: Albers Bros., Parr-McCormick S. S. Co., California Transportation Co., Comyn, Mackall & Co., Atkins, Kroll & Co., Burns-Philp Co., A. F. Thane & Co., Luckenbach S. S. Co., W. R. Grace &

Tow boat companies: Same as San Francisco, with addition of Hanlon Barge & Towboat Co. and Oakland Launch & Tugboat Co.

Shipping Facilities

Snipping Fa	CHITIES	•	
	Frontage	Width	0.5
	on water		
Wharves:	in feet	feet	Ţ.
Union Construction Co. (Ship	-		
builders)	. 800	40	
Parr Terminal Co	. 1417	67	
Pier and warehouse under con			
struction	F00	180	
Albers Bros.' Milling Co.,	2	100	
store dools	. 950	200	
story dock	. 950		
Southern Pacific Railroad Co		50	
Asiatic wharf	. 877	100	
General Cargo Wharf (unde	r		
construction) Lumber wharf	. 877	70	
Lumber wharf	. 877	75	
Western Pacific Railroad Co	. 375	12	
Coos Bay Lumber Co	. 500	140	
Moore Shipbuilding & Drydocl			
		26	
		20	
Moore Shipbuilding & Drydocl		ro.	
Moore Shipbuilding & Drydocl	. 500	50	
Moore Shipbuilding & Drydoci	k zaa		
Co	. 500	40	
Howard Co	. 400	60	
Howard Co	. 500	110	
City of Oakland:-			
Livingston Street	. 295	124	
Sunset Lumber Co		65	
Webster Street	. 243	60	
Franklin Street	. 263	40	
Trankin Street	. 200		
Taylor Coal bunkers	. 180	40	
Taylor wharf	. 76	40	
Washington Street		320	
Quay wall	. 315	1 <b>5</b> 0	
Clay Street	. 294	76	
Hogan Lumber Co	. 450	300	
Santa Fe Railway Co	. 700	25	to 75
D. J. Hanlon Drydock and Ship	-		
huilding Co	. 850	24	
building Co	. 650	47	
D. J. Hamon Drydock and Ship	- 400	20	
building Co	. 600	30	
D. J. Hanlon Drydock and Ship	-		
building Co	. 500	70	
LaRue Wharf and Warehous	e		
Co	. 414	40	to 80
E. K. Wood Lumber Co	. 130 to	170 680	
Rhodes-Jamieson & Co			
Barnes & Tibbitts (shipbuilders		40	
Barnes & Tibbitts (shipbuilders		20	
Dames & Tibbitts (shipbullders	325		
Barnes & Tibbitts (shipbuilders		34	
Alaska Packers' Assn		30	
Bethlehem Shipbuilding Corp.		36	
Bethlehem Alameda Plant		36	
Associated Oil Co	. 200	15	
		C ~ ~	~I~

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Lighterage companies: Hanlon Barge & Towboat Co., Oakland Transportation Co., W. R. Rideout Co.

Warehouse capacity of various docks—Albers, 290,000 sq. ft.: Asiatic wharf, 20,640 sq. ft.; Western Pacific Ry. Co., 1800 sq. ft.; Howard Co., 30,000 sq. ft. (coal bunkers, fuel oil pipelines); Webster Street, 14,580 sq. ft.; Franklin Street, 9105 sq. ft.; Quay Wall, 36,000 sq. ft.; Clay Street, 22,344 sq. ft.; Santa Fe Ry. Co., 22,321 sq. ft. sq. ft.; Clay 22.381 sq. ft.

#### Ship Repair Facilities

Barnes & Tibbitts—Equipped to repair wood and steel ships; 1 marine railway, capacity 4000 tons; 1 marine railway, capacity 1100 tons; 1 marine railway under construction, capacity 2500 tons.

Bethlehem Shipbuilding Corporation—Equipped to repair wood and steel ships floating drydock, 3000 tons capacity; 2 marine railways, capacity 2000 to 4000 tons.

D. J. Hanlon Drydock & Shipbuilding Co .-- Equipped to repair steel and wooden vessels and all kinds of machinery; marine railway, capacity 4000 tons.

Moore Shipbuilding and Drydock Co.-Anything in repair work, except that necessitating docking vessels over 4000 tons; drydock of 15,000 tons capacity under construction; marine railway, capacity 4000 tons.
Union Construction Co.—Equipped to do general

ship repair work.

Railroad connections: Southern Pacific Co., Western Pacific Ry.; Atchison, Topeka & Santa Fe Ry. Co.; San Francisco-Oakland Terminal Rys.; Oakland, Antioch & Eastern Ry. Co.

Industries adjacent to shipping: American Manganese Steel Co., Albers Bros. Milling Co., National Pole Co., Clements & Son (cocoanut oil), Coos Bay Lumber Co., U. S. Concrete Shippard, Government Island, Brooklyn Basin; Dow Pump & Diesel Engine Co.; Union Gas Engine Co.; E. K. Wood Lumber Co.; California Cotton Mills; Pinal Dome Refining Co.; Atlas Imperial Gas Engine Co.; de Fremery-Cadman Materials Co.; Lawrence Warehouse Co.; American Creamery Machinery Co.; Hogan Lumber Co.; Empire Foundry Co.; United Iron Works; Standard Brass Casting Co.; Phoenix Iron Works; Pacific Gas & Electric Co.; California Fruit Canners Association; Standard Underground Cable Co.; California Packing Corporation; Judson Mfg. Co. (steel); California Paint Co.; Paraffine Paint Co.; Pacific Tank & Pipe Co.; Mercantile Box Co.; and various other industries to the number of 1,450. There are 166 different lines of manufacturing carried on in the industrial community of which Oakland is the center, Leading lines—Shipbuilding, motor cars, lumber, foundry and machine shop products, food products, building materials, textiles, wearing apparel, printing and publishing, chemical products, salt, paper products, petroleum products, rubber products, paint, fertilizer, leather products, sugar, creamery supplies,

Expenditures (outside of railroads and private corporations) on harbor to date:

U. S. Government	 \$4,527,068.35
City of Oakland .	 \$2,653,000.00
Total	 \$7,180,068.35

New Municipal quay wall, at foot of Clay St., most ideal combination of shipping facilities to be found. The wall is 1,928 feet long, with 27 feet of water at low tide, and the very latest type of fender system. Two fireproof warehouses, 90x400 feet, with tracks at shipside as well as in rear of sheds. Very latest type of water system for supplying vessels and for fire protection, supplemented for the latter purpose by a high pressure salt water system which runs along First St. 300 feet north of the wall. Up-to-date oil system for supplying vessels; coal bunkers at west end and within half a mile of the principal wholesale and business section.

#### Rates of Dockage

Sec. 10. The rates of dockage in the Harbor of the City of Oakland shall be, for a day of twenty-four (24) hours, or any part thereof, including Sundays, holidays

and rainy days, as follows:

For all ocean vessels, steam or sail, of two hundred net registered tons or under, 2 cents per ton; for all such vessels of over two hundred net registered tons, \$4.00 for the first two hundred tons and three quarters

of a cent for each additional ton.

For all bay and river steamboats and barges used for carrying freight or passengers, of two hundred tons or under, under-deck tonnage measurement, 2 cents per ton on such measurement; for all such vessels of over two hundred tons, under-deck tonnage measurement, \$4.00 for the first two hundred tons, and three-quarters of a cent for each additional ton.

Full rates shall be charged as follows:

(1) Vessels with cargo on board docking at a public

wharf or landing while discharging cargo.
(2) Vessels with no cargo on board docking at a public wharf or landing while discharging or taking on passengers and baggage.

Vessels with no cargo on board docking at a public wharf or landing while discharging passengers

and baggage.

(4) Vessels with cargo on board docking at a public wharf or landing while taking on stores, supplies or fuel oil for fuel of such vessel.

(5) Vessels with cargo on board docking at a public

wharf or landing while lying idle.

Vessels that are engaged in towing.

Vessels that are not engaged in carrying freight and passengers.

Half rates shall be charged as follows:
(1) Vessels with no cargo on board docking at a public wharf or landing while loading cargo.

(2) Vessels with no cargo on board docking at a public wharf or landing while receiving passengers or exclusive of stores, supplies or fuel oil for fuel of such vessel.

Vessels with cargo on board docking at a public wharf or landing while taking on an amount of cargo equal to one-fifth of net registered tonnage, exclusive of stores, supplies or fuel oil for fuel of such vessel.

Vessels with no cargo on board while lying idle (4)

at a public wharf or landing.

(5) Vessels while receiving or discharging ballast or receiving stiffening. (6) Vessels discharging, loading or lying idle while

occupying outside berths. (7) Vessels while moored in docks, slips, basins or

channels. (8) Vessels with no cargo on board, while under-

going repairs.

(9) Vessels engaged in towing and vessels not engaged in carrying freight and passengers are NOT ENTITLED TO HALF RATES.

Dockage commences upon the vessel when she makes fast to the wharf, or comes within a dock, slip, basin or channel; and each twenty-four hours thereafter, or part thereof, constitutes a day's dockage. No deduction shall be made for Sundays, holidays or

rainy days.

A vessel arriving from private premises will be charged at the same rate and in the same manner as if arriving from the stream, except as hereinafter otherwise provided.

Any vessel which has paid to the City of Oakland one dockage for any day may use and dock at the same or any other wharf, or landing, public or private, during the same day, and leave and return as often as it may desire, without being required to pay any additional dockage for such day; provided, however, that any vessel availing itself of the privileges under this section must first obtain and or desired and or desired. this section must first obtain and on demand produce the receipt of the Wharfinger or Assistant Wharfinger for the dockage paid to said City for such day.

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	Rates of Dockage on Lighters
	11. A lighter is understood to be a vessel
	has neither power nor steering equipment. ockage rate of one cent per ton net tonnage
per day	will be charged on all lighters in the following
cases:	When discharging or loading at a wharf.

(2) When discharging into or loading from a vessel lying at a wharf, or when lying at a wharf or in a slip with or without cargo on board.

(3) When transporting from a wharf to a vessel,

(3) When transporting from a wharf to a vessel, or from a vessel to a wharf, but one dockage charge will be made per day.

#### Tolls

Sec. 12. Both a discharging and a loading toll shall be imposed on all merchandise (including vessels' stores and supplies and fuel oil for such vessel) except where otherwise specified, and must be paid by the vessel discharging or loading same.

Sec. 13. A ton is by weight 2,000 pounds, unless otherwise specified; by measurement 40 cubic feet.

Sec. 14. Merchandise, for the purpose of tolls or

Sec. 14. Merchandise, for the purpose of tolls or wharfage, must be computed by weight measurement, as the one mode or the other will give the greater number of tons.

Sec. 15. Of the following articles 2,240 pounds constitute a ton: coal, railroad iron, pig iron, gypsum, asphaltum, ores, crude or boiled sulphur, paving stones, sand, gravel, crushed rock and ballast.

### Rates of Toll

Tolls per Ton:

Sec. 16. On the following merchandise tolls	must
be paid as follows:	must
On merchandise (except where otherwise	
specified), including vessels' stores and	
supplies, and coal and fuel oil for such	
vessel, per ton	cents
On flour, grain and millstuffs, per ton 5	cents
On 400 pounds or less 1	cent
On 800 pounds or less and more than 400	cent
	cents
On 1200 pounds or less and more than 800	cents
pounds	cents
On 1600 pounds or less and more than 1200	
pounds 4	cents
On 2000 pounds or less and more than 1600	
pounds 5	
Tolls on merchandise, when measured or char	
higher rate, to be collected according to the for-	egoing
subdivisions:	
Tolls Charged Otherwise Than by the Ton.	
Sec. 17. On the following articles tolls must b	e paid
as follows:	
Fir, redwood, spruce, and all softwood lum-	
ber, per 1000 feet, board measure 10	cents
Oak, hickory, ash, and all hardwood lum-	
ber, per 1000 feet, board measure 20	cents
Lumber or timber discharged in the water in an	ıy slip,
dock, basin or channel, the same as if discharg	ged on
a wharf.	
Piles discharged in any slip, dock, basin, or	
channel, per pile	cents
Fence posts, per 100,	cents
Railroad ties, per 1000 feet of lumber, board	
measure, contained therein (32 or 24 feet	
to a tie, according to size) 10	cents
Shingles, per 40 bundles 10	cents
Laths, per 60 bundles 10	cents
Shakes, per 100 bundles 10	
The state of the second	cents
Empty barrels (merchandise) each }	
Empty sugar barrels, each	cent
Empty sugar barrels, each	cent
Empty sugar barrels, each	cent cent
Empty sugar barrels, each	cent cent cents
Empty sugar barrels, each	cent cent cents cents
Empty sugar barrels, each	cent cent cents cents
Empty sugar barrels, each	cent cent cents cents
Empty sugar barrels, each	cent cent cents cents cents
Empty sugar barrels, each	cent cent cents cents cents

Bricks (other than fire bricks) discharged on or loaded from any wharf, per 1000 Bricks (other than fire bricks) discharged from any vessel lying at any wharf, or in any slip, dock or basin, into another vessel,	10	cents
or received into any such vessel from any lighter or other vessel, per 1000	5	
Hops in bales, per bale	1	cents cent
Wool or cotton in sacks, per sack	1	cent
Wool or cotton in bales stranged per bale	î,	cent
Wool or cotton in bales, strapped, per bale Hides of cattle (green or dry) per hide	1	cent
Skins, per skin	18	
Rabbit skins, per bale		cents
Cattle, horses and mules, per head	5	cents
Colts and calves, under a year old, per head	21	cents
Sheep and hogs, per head	ī	cent
Hay, per ton	10	cents
Crushed rock (long ton)	5	cents
Reapers, mowers, horse-rakes, hay presses,		
gang plows, cultivators, and wheeled ve-		
hicles, set up, each	10	cents
Headers and separators, set up, each	20	cents
Charcoal, per 35 sacks (of 55 pounds each)	5	cents
Cement, 5 barrels to the ton, per ton	5	cents
Lime, 8 barrels to the ton, per ton	5	cents
Beef, pork or fish, 6 barrels to the ton, per	-	
ton	5	cents
Sugar or syrup, 6 barrels to the ton, per ton .	5	cents
Wine or liquor, per bbl	11	cents
Wine or liquor, per pipe	. 5	cents
Cocoanuts, per 1000, unhusked	15	cents
Cocoanuts, per 1000, husked	10	cents
Bananas, per bunch	1	
Salmon, per ton of 2000 pounds	5	cents
Crude oil (whether in barrels or bulk), per	•	cents
ton of 2000 pounds, 734 lbs. to gallon	5	cents
Crude oil, naptha, gasoline, etc., conveyed	•	
either inward or outward, over or through		
any wharf, bulkhead or other structure, or		
loaded or discharged in any slip, basin or		
channel, per ton of 2000 pounds (734 lbs. to		
gallon)	5	cents
(The weight of crude oil contained in	•	•••••
tanks or vessels or conveyed to or from		
shipping, to be computed on the basis of		
734 pounds per gallon, if actual weight is		
not obtainable.)		
•	5	cante
Copra, by measurement, per ton	J	cents

Sec. 18. On empty packages, being returned to the owner, who uses them to send commodities to market, no tolls will be charged.

Sec. 19. Grain, flour, millstuffs, beans and seeds will be subject at all wharves, except at the grain shed to be specially located on some wharf or wharves by resolution of this Council, to the same rules and rates of tolls and wharfage as are imposed on other merchandise.

Sec. 20. Grain, flour, millstuffs, beans and seeds may remain in the grain shed so specially located until 5 o'clock P. M. on the third day after discharge free of wharfage charge; for the next fifteen days, or any part thereof, Sundays and holidays excepted, there shall be a wharfage charge of 5 cents per ton; for each additional day thereafter the wharfage charge shall be 5 cents per ton; provided, that where any owner or consignee fails or refuses to pay, on demand, bills rendered for wharfage or refuses to comply with other rules and regulations of the City of Oakland, the provisions of section twenty-six (26) of this ordinance shall apply\* and become immediately effective as to such owner or consignee; provided, further, that in the event of congestion in the grain shed the Wharfinger is empowered, at any time after the expiration of the third day after discharge, to cause the removal to the rear of the shed of any carge, or portion thereof, at the expense of the owner or consignee.

Sec. 21. The term "grain" is intended to and does include wheat, barley, oats, corn and rye; the term

"flour" includes only the flour of wheat, and "millstuffs" includes only bran, midlings, shorts and ground

Sec. 22. No tolls will be charged on donkey engines or stevedores' tools when taken on the wharf for the purpose of loading or discharging a vessel; nor on milk, ice or butcher, baker and laundry supplies furnished

daily to vessels,
Sec. 23. Merchandise landed on a wharf and not removed therefrom may be reshipped from the same wharf, without the payment of further toll, but the wharfage, if any due thereon, must be paid.

Sec. 24. Merchandise, except where otherwise specified, when discharged from a vessel lying at any wharf or within any slip, into lighters or other vessels, is subject to the same rates of toll as if discharged on or loaded from a wharf.

Sec. 25. When the tolls have been paid on merchandise on its being discharged from a vessel into a vessel, it may be landed thence on a wharf, or discharged into another vessel, without the payment of further

tolls.

#### Wharfage

Sec. 26. Merchandise must be removed from the wharf before 5 o'clock P. M. on the day following the one on which it was placed thereon; but the Harbor Manager and Wharfinger are hereby authorized, when the owners or consignees of merchandise desire it, and it can be done without interfering with the business of the wharf, to allow merchandise to re-main on the wharf after the prescribed time, at a wharfage charge equal to an additional toll for every wharrage charge equal to an additional toll for every forty-eight hours, or part thereof, Sundays and holidays excepted. If merchandise be not removed within twenty-four hours after notice by the Wharfinger, it shall be liable to pay double the regular rates. No merchandise for outbound shipments shall be placed upon any wharf, pier or thoroughfare before 8 o'clock A. M. on the day preceding the arrival of the vessel to carry such merchandise, without first obtaining permission from the Harbor Manager or Wharfinger.

Lumber discharged from vessels carrying 500,000 feet board measure, or over, and from vessels of no lesser capacity, may remain on wharf until 5 o'clock P. M. of the third day following its discharge. Then and thereafter all provisions of this section shall be effec-

tive and must be enforced.

Sec. 27. The Council of the City of Oakland may by resolution from time to time provide for a Credit List of persons and vessels liable to pay dockage, tolls or wharfage hereunder, and prescribe by such resolution the mode and manner in which, and the terms and conditions upon which, such persons or vessels, or any of them, may be placed upon such credit list and become entitled to credit for dockage, tolls and wharfage that may become payable and due from them; and the Council shall by such resolution further provide for the collection of dockage, tolls and wharfage charges to persons or vessels on such credit list. Any person or vessel on such credit list shall not be required to pay dockage, tolls or wharfage in cash and at the wharf or landing, before the departure of the vessel or removal of the merchandise as hereinabove provided, but shall deliver to the Wharfinger or Assistant Wharfinger a written acknowledgment of the amount due and payable from such person or vessel, at the time, for dockage, tolls and wharfage, or either, signed by such person, or his agent, or by the master, agent or person in command of such vessel; and thereupon such amount shall be charged to and paid by, or collected from, such person or vessel as may be provided by such resolution of said Council.

Sec. 28. The Council of the City of Oakland may by resolution from time to time, suspend the provisions of this ordinance providing for and relating to wharfage, either wholly or in part, and may by such resolution extend the time for which merchandise may be allowed to remain on municipal premises without payment of wharfage, or prescribe different rates.

Sec. 32. Ordinance No. 1547, and all ordinances and parts of ordinances in conflict herewith, are hereby repealed.

Sec. 33. This ordinance shall take effect from and after its passage

In Council, Oakland, Calif., January 19, 1917.

### Other Charges

Fresh water cost: 23 cents per 1,000 gallons, or 19 cents per 100 cubic feet.
Cartage charges: 50 cents to \$2.50 per ton, depending upon the portion of Oakland, Alameda or Berkeley to which consignment is destined. (Average about 50 cents per ton from Inner Harber to main section of Oakland.)

Stevedore	Rates—Discharging

Coal, Ore products	\$0.65
Sugar, in mats or baskets at refineries	.60
Hawaiian and Philippine Sugar at refineries	.45
Hawaiian and Philippine Sugar at San Francisco	.60
Cement, Nitrate (ship's slings)	.50
Salmon	.50
Copra, in bulk	.85
Sulphate of Ammonia, Fertilizer, Sulphur, Pine-	.70
sheet Iron and Bar Iron under 3 inches in dia-	./0
meter, Gas and Water Pipe	1.10
Bar Iron 3 inches or over, Structural Iron, Plates,	1.10
Angles, Beams, Girders, Blooms	1.60
Pig Iron, Ballast, Chalk, Cliffstone	.70
Railroad Iron	.90
Coke and Carbons	1.10
Slab and Block marble, up to 2 tons	2.30
Weight over 2 tonsspecial	rate
Bean oil, in cases	.85
Wool, Hemp and Cotton (Measurement)	.55
General Merchandise (weight or measurement	.75
which ever is greater)	.73
Stevedore Rates—Loading	
Wheat, Flour, Barley, Beans, Bran and Oats	.50
When handled on dock or barge, 20 cents extra.	
Canned Salmon and Fruit and Case oil (Measure-	
ment)	.70
Wine, Tallow, Asphalt, Oil and Salmon in Barrels	.95
Sheet Iron, Bar and Bundle Iron under 3 inches in	1.20
diameter, Gas and Water pipe	1.75
Lumber, 1000 feet B. M	1.20
Loading and discharging Explosives	
General Merchandise (weight or measurement,	2.00
whichever is greater)	.75
Special rate for Bar Iron 3 inches in diameter or	•
Special rate for Bar Iron 3 inches in diameter or over, Structural Iron, Rails, Machinery, Pipe,	
Plates, Angles, Beams, Girders, Blooms	1.65
Scrap iron and all other commodities over 400	
1bs. ———	
0 1 1 1 DII	

# **OAMARU** New Zealand

Position: Latitude 45 degrees south, longitude 171 degrees east.

Population: 6,000.

Port charges: Tonnage dues on cargo in and out, coal, general, stone, timber, 8d; wool, 2s per ton; frozen sheep and lamb, Id per carcas; frozen rabbits and hares, 3s per ton; other cooled goods. 3s per ton on gross deadweight. These charges in lieu of port dues, pilotage and berthage. Warps are charged ½d per ton reg. per day for first 7 days at wharves, and if elsewhere 1d per ton reg. per rope per day, maximum, at discretion of harbor master.

Accommodation: Breakwater harbor, commodious and safe for vessels of 8,000 tons. There is a railway connecting with all chief ports in Middle Island. The cranes in use have a capacity of 7 tons. Area inside breakwater, 60 acres. Depth at quays, 28 feet. Depth of basin, HWST.

23 feet.

Imports: Manufactured goods, timber, coal.

Exports: Frozen meat, wool, grain.



# **OCOS**

#### Guatemala

Position: Latitude 14 degrees 37 minutes north, longitude 92 degrees 10 minutes west.

Population: 1,200.

Imports: General merchandise. Export: Coffee.

Accommodation: This is an open roadstead, sandy bottom. Vessels anchor in about 6 fathoms of water, about 34 of a mile from shore. Launches are hauled in by means of a cable.

Entrance and Clearance Fees: \$25 (U. S. Gold).

### **OLEH-LEH**

## Island of Sumatra, Dutch East Indies

Position: Latitude 5 degrees 35 minutes north, longitude 95 degrees 45 minutes east.

Port Charges: Every ship is charged 16c per cub.

metre every six months.

Accommodation: Vessels anchor in 5 fathoms to discharge cargo, about one-quarter of a mile offshore. There are no quays or docks. There are cranes on two jetties for receiving cargo.

Exports: Gold, pepper, betel-root, camphor.

# **OLYMPIA** Washington

Population: 11,000.

Pilotage: Not compulsory.

No stevedoring. Owners do own loading and unloading. Accommodation: 1,000 feet; ample.

On account of there being no large steamship companies operating at this port, data of imports and exports, which consist mostly of merchandise carried by the small companies listed below between this port and down-sound points, is difficult to obtain. About 300,000,000 feet of logs are towed out of here annually. Lack of provision for harbor depth works a hardship on this city.

List of wharves: Percival's Dock, local passenger and freight traffic. Standard Oil Dock, sufficient berthing space for coast-wise vessels. McCleary Timber Co. Wharf, lumber wharf, with large space for storage, no storage warehouse. City Wharf, designed for local passen-

ger and freight traffic, small storage warehouse.

Merchants Exchange: Olympia Chamber of Commerce.
List of charges: Towage, nominal. Anchorage, none.

Wharfage, 25 cents, general merchandise; minimum 10 cents. Stevedoring, no fixed charges. Cartage, 50 cents per ton average. Coaling, none. Water, 50 cents per Water, 50 cents per vessel.

Industries adjacent to shipping: Sawmills, lumber manufacturing plants, oyster packing plants, shipbuilding

plants.

Tug Companies: Olympia Tug & Barge Co., Young

Tow Boat Co.

Steamer Lines: Olympia-Tacoma Navigation Co., Shelton Transportation Co., Merchants' Transportation.
Railroad Connections: Northern Pacific, Oregon-Wash-

ington Railroad & Navigation Co.

# **OSAKA**

### Japan

Position: Latitude 34 degrees 41 minutes north, longitude 135 degrees 25 minutes east.

Population: 1,463,500.

On banks of Yodogawa River, emptying into Bay of Osaka, across from Kobe, with which it is connected by several lines of steam and electric railways. Does not offer as good shipping facilities as Yokohama and Kobe, though much of the lighter steamship traffic enters.

Authority vested in Municipality.

Imports: Rice, beans, hides, raw cotton, manures, iron,

hemp, China grass, timber, phosphorite, coal, refined sugar. Exports: Cotton tissues, papers, cement, refined sugar, sake, fruits, timber, cotton yarn, iron, matches, glass, pot-

teries, hosiery groceries.

Accommodation: Good anchorage (mud) 696 acres with 29 feet depth at L. W. Harbor entrance 600 feet (at bottom) with 29 feet depth at L. W. Two 15-ton and two 1½-ton floating cranes and four 1½-ton wharf cranes. Steel landing pier, 1,500 feet long, projecting from front wharf, used only for mail boats. Vessels of 6,000 to 7,000 tons can moor alongside two landing piers at Sakura-jima, where runs a branch line from the Osaka Central station. Three dry docks, 520, 288, 192 feet at the river Aji, belonging to Osaka Iron Works; two other docks, each 28 feet depth, at the river Kidzu, and four quays, 1,200 to 1,500 feet with 29 feet depth at L. W. (one quay of 1,200 feet having half long 29 feet, other 33 feet depth at L. W.) are now under contemplation by the municipality.

Port Charges: No dues for coasters; foreign trade, Government dues 5 sen (2½ cent) per ton, or 15 sen per ton annually; river dues (local government) 5.7 sen per ton. No dues for harbor and piers. Dues for buoys, 3-5 yen per day. 15-ton floating crane, 5 yen per hour; 1½-ton wharf crane, 1 yen per hour. Loading and unloading mer-chandise; between ships and lighters, 30-45 sen per ton, between lighters and wharf, 50-65 sen per ton; lighter-age, 80 sen to 1 yen and 50 sen; Custom broker's com-

water pumped on board, 28 sen per ton.

Officials: British Vice-Consul, O. White; Director and Engineer-in-Chief, Department of Harbor and Docks, Dr.

R. Naoki.

# **OTARU**

### Japan

Position: Latitude 43 degrees 12 minutes north, longitude 141 degrees east.

Population: 94,700.

Accommodation: Harbor land-locked on three sides, and is partly protected by a breakwater on the east side. Coaling pier; general pier. There is a 5-ton crane for which 50 sen per day is charged. Government railway on the islands connects here. Depth at entrance 47 feet; berth, 24 to 38 feet; quay, 25 feet.

Stevedoring: Rates similar to those at Muroran.

Imports: Machinery, sugar, kerosene. Exports: Coal, timber, oats, onions, apples, peas, beans, potato starch, sulphur.

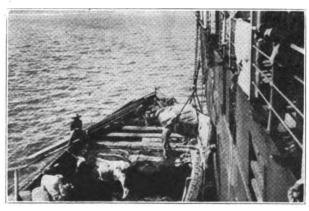
# **PACASMAYO**

### Peru

Population: 4,000.

Exports: Rice, sugar, copper, silver.

Imports: Drygoods and miscellaneous articles, machinery, drugs.



Leading Ship at Pacasmaye-Copyrighted by Underwood & Underwood

The port of Pacasmayo is located on Pacasmayo cove at the mouth of the Jequetepeque River on what is called a fairly good roadstead with about 22 feet of water. Pacasmayo is important because of its proximity to a rich agricultural district and is the ocean terminus of a railroad which reaches the agricultural and mineral lands of the interior. It is the regular port of call for the Peruvian steamship line, the Chilian coast line and the Pacific Steam Navigation Co., and vessels of the Panama-Valparaiso service. The pier has two tracks with two steam cranes of five tons capacity. Goods are transferred to pier by lightpart of the equipment, but the Peruvian government took prompt steps to make the necessary repairs.

### **PADANG**

### Island of Sumatra, Dutch East Indies

Position: Latitude 58 minutes south, longitude 100 degrees 20 minutes east.

Population: Malay, European, Chinese, estimated 25,000.

Emmahauen is the port of entry.

Pilotage, Compulsory: For ships, less than 100 M3 tonriotage, Computory: For sings, less than 100 M3 tonnage free; for ships from 100 to less than 500 M3 tonnage f. 5; for ships from 500 to less than 1500 M3 tonnage f. 10; for ships from 1500 to less than 2500 M3 tonnage f. 20; for ships from 2500 to less than 3500 M3 tonnage f. 30, etc

Port Charges: Tonnage or wharf dues, ½ cent per M3 tonnage per 12 hours or parts thereof. Custom house fees not payable when ship is discharging at day time, except on Sunday, Customhouse fees on Sunday, f. 2 per hour, maximum f. 20 for a whole Sunday from 6 a. m. to 6 p. m. Customhouse fees when ship begins or continues discharging after 6 o'clock p. m., f. 2 per hour, maximum f. 20 for a whole night from 6 p. m. to following day,

Other Charges: Local harbor dues 3½ cents per reg. ton per day. Anchorage dues 16 cents per cubic meter or 4534 cents per reg. ton per 6 months for the whole of the

archipelago.

Stevedoring: Rates for loading cargo, glds. 0.80 per ton. Stevedoring: Rates for loading cargo, glds. 0.80 per ton. Rates for discharging cargo, 1 guilder per ton. Overtime cost per hour, for European employes, 2 glds. per hour; for native employes, 1 gld. per hour. Cost for general labor, for coolies, 0.95 glds. per day; for foreman, 1.25 glds. per day. Lighterage, lighters loading about 40 to 50 tons per load. Lighterage, cost per lighter per day, Glds. f. 5; overtime cost, Glds. 4.50 per day.

Accommodation: There are four wharves for steamers and three small ones for saling years less that the same start three small consecutives.

and three small ones for sailing vessels. Draft of water

at neap tides 26 feet and at spring tides 29 feet.

Imports: Cotton, provisions, matches, iron and steelware, earthenware, glassware.

Exports: Cassia, copra, mace, gum bejamin, gum

damar, gambir, rubber, horns, hides, kapok, coffee, nutmegs, rattans, tobacco, wax, groundnuts, Kemirinuts, betel nuts, cocoanut oil, rice.

betel nuts, cocoanut oil, rice.

Names of Importing and Exporting Firms: Messrs.
Van Houten Steffan & Co., N. V. L. E. Tals & Co.'s Handel Maatschappy, Geo Wehry & Co., Padangsche Handel Maatschappy, Handels Compagnie Padang. Haacks & Co.
Steamer Lines. Using the Port: Koninklyke Paketvaart Maatschappy, Stoomvaart Maatschappy, "Rotterdamsche Lloyd," Stoomvaart My. "Nederland," Ocean Steamship Co. Ltd., China Mutual Steam Navigation Co., Ltd.
Consular Representation: United States, (Horace J. Dickinson, consul), England, Sweden, Norway. Belgium. China, Denmark, Germany, Austria.

China, Denmark, Germany, Austria.

Cost of Water: When using ship's hoses, 1 guilder per cubic meter; when using government hoses, 25 cents extra per cubic meter.

# **PAITA**

Position: Latitude 5 degrees 5 minutes 2 seconds south, longitude 81 degrees 7 minutes 12 seconds west.



Harber of Palta-Copyrighted by Underwood & Underwood

Population: 3,000.

Pilotage: Not compulsory.
Port Charges: Tonnage dues, S/0 20 per registered ton, payable every six months, good for the whole coast. Light dues, S/0 02 per reg. ton. Other charges, captain of port's fees, S/5.

Stevedoring: Rates for loading cargo, S/0 45 per hour. Rates for discharging cargo, S/0 45 per hour. Overtime cost per hour, S/0 60. Cost per hour for general labor. S/0 45. Lighterage, cost per ton, as per special tariff.

Accommodation: No docks or wharves. The Paita bay is

one of the finest on the coast and has a good anchorage in from 5 to 20 fathoms.

Imports: General merchandise.

Exports: Cotton, hides, goat skins, cotton seed, Panama

Names of Importing and Exporting Firms: Duncan. Fox & Co., G. Artadi & Co., Milne & Co., Seminario & Co., F. E. Helguero.

Steamer Lines Using the Port: The Pacific Steam Navigation Co., The Compania Sud Americana de Vapores, La Compania Peruana de Vapores y Dique between Chile and Panama, The Nautilus Steamship Co. from Liverpool, the Merchant Line from New York.

Consular Representation: United States, Great Britain,

France, Italy, Belgium, Holland and the South American

Republics.

The Central and South American Telegraph Co. has a station at this port.

## **PAPEETE** Society Islands

Population: 5.000.

Pilotage: Under 400 tons, first 100 tons, 8fr per 10 tons, then 7fr per 10 tons; over 400 tons, first 100 tons 6fr, then 3fr per 10 tons, Moving ship, 20fr. Sanitary dues, 15c per ton.

Port Charges: In and out, inclusive. Wharfage, ships over 100 tons 14fr per day. Light dues, 0.375fr per ton.

Accommodation: Safe harbor, reef-locked basin with wharfage and sheds. Wharf accommodates one steamer of 7,500 tons. No cranes, Slip for vessels up to 200 tons. Depth in channel, 13 and 14 metres in middle; at quay 4 to 8 metres. Rise of tide, about one foot.

Imports: Cereals, coal, timber, general merchandise. Exports: Copra, pearls, mother-of-pearl, fruit, vanilla, cotton, cocoanuts, beeswax, oranges, lemons.

# PEKALONGAN Island of Java, Dutch East Indies

Population: About 44,000.

Position: Latitude 6 degrees 51 minutes 30 seconds south, longitude 109 degrees 43 minutes 40 seconds east. Vessels anchor about 1½ mile off shore in 3½ to 4½ fathoms.



## PENANG Straits Settlements

Position: Latitude 5 degrees 24 minutes north, lon-

gitude 100 degrees 21 minutes east.
Population: 141,559 (census of 1911).
Pilotage: Compulsory at present.
Port Charges: Tonnage or wharf dues, inward at wharf 25c per ton, outward at wharf 40c per ton. If steamers discharge in roads 10c per ton. Customs duties are only leviable on opium, spirits and tobacco.

Stevedoring: Rates for loading and discharging cargo, 25 cents per ton. Overtime cost, half night, \$25 or \$50 per whole night. Cost per day for general labor, 80 cents. Lighterage, cost per ton, 35c on the average. Lighterage cost per lighter per day, \$25.

Accommodation: Length of wharf 1200 feet, depth of water 30 feet L. W. S. T.

Imports: General, piece goods, iron, cutlery.

Exports: Tin, rubber, copra, tapioca and spices, arrow-

Names of Importing and Exporting Firms: Adamson, Gilfillan & Co. Ltd., Boustead & Co., Guthrie & Co. Ltd., McAlister & Co. Ltd., Paterson, Simons & Co. Ltd., Sandi-

lands Buttery & Co.

Steamer Lines Using the Port: P. & O. S. N. Co. Ltd.,
O. S. S. Co. Ltd., China Mutual S. N. Co. Ltd., Shire Line,
Glen Line, Ben Line, and Nippon Yusen Kaisha calling at Penang on voyages between the United Kingdom and the Far East, B. I. S. N. Co. Ltd. to and from India and Burma and occasionally to Australia; Indo-China S. N. Co. Ltd. and B. I. Apcar line, calling at Penang on voyages to and from India, China and Japan; the Straits Steamship Co. Ltd., trading between Singapore, Penang and F. M. S. ports; the Koninklijke Paketvaart Maatschappy to Sum-

atra and Java and occasionally to Borneo.

Consular Representation: United States, Belgium, China, Denmark, France, Italy, Netherlands, Norway, Portugal,

Siam, Sweden.

Penang is the chief northerly port of the British Straits Settlements, and its commercial importance lies in the excellence of the soil and the character of the climate. The

rainfall amounts to 89.5 yearly. The main articles of export are sugar, spices, rice and tin. More attention is being given the production of rubber, and a steady increase in exportation has been noted in the last few years. The principal merchants and shippers are Chinese.

# PERTH (See Fremantle) Western Australia

Position: Latitude 31 degrees 57 minutes south. lon-

gitude 115 degrees 52 minutes east.
Population: 92,138, including suburbs.
Perth is the capital city of the state situated about 12 miles above the port of Fremantle on the Swan river.
Cargo for Perth is carried from Fremantle by lighters or via the railway.

## **PISAGUA** Chile

Population: 5,000.
Pilotage: Compulsory; \$40 C. Cy. each way.
Stevedoring: Rates for loading and discharging cargo,
\$9 C. Cy. for loading nitrate per 1,000 quintals.
Accommodation: Vessels anchor in about 14 fathoms half mile from shore; customs house pier with hand crane; 3 private piers; heaviest weight discharged, 3½ tons; number of private moles; government mole can discharge about 4,000 tons per day.
Imports: Coal, general merchandise, residuum, petroleum, bags, twine, iron, hardware.

leum, bags, twine, iron, hardware.

Exports: Nitrate of soda, iodine. Steamer Lines Using the Port: P. S. N. C., C. S. A. V., weekly service

# PORT ADELAIDE South Australia

Position: Latitude 34 degrees 57 minutes south, lon-

gitude 138 degrees 40 minutes east. Population: 225,000.



King William Street, Adelaide

This is the main port of South Australia, and lies seven miles from the city, but from it practically the whole of the shipping trade of the state is controlled. It is navigable for vessels of large draft, and is gradually being made one of the most up-to-date ports of the Commonwealth. The outer harbor is situated at Light's passage, and practically all the oversea companies are now utilizing this harbor. The entrance channel has a width of 400 feet, which opens out into a swinging basin about 3,500 feet long by 1,126 feet wide, the whole having a minimum depth of 30 feet ordinary low water spring tide. Two large cargo sheds, measuring 2,100 feet by 50 feet and 496 feet by 50 feet, respectively, have been erected. Turning to the inner harbor, it is found that there is some two and a half miles of wharves, with 10 feet to 27 feet at ordinary low water spring tide. A swinging berth 600 feet long has been deepened to 23 feet, ordinary low water spring tide, opposite the northern end of the Ocean Steamers' wharf. A mooring berth, 700 feet long with a depth of 26 feet ordinary low water spring tide, just to the south of the swinging berth and on the west side of the river, is also available. Further wharfage accommo-dation is being provided. Here the only docking accommodations are four patent slips, in private hands, capable of taking on vessels of 300 tons to 1,500 tons gross; also two cranes to lift about 30 tons each, the largest of these being 720 feet extreme length, 250 feet length of cradle, with a lifting power of 1,500 tons and draft on blocks, high water spring tide, forward 13 feet, after 20 feet 6 inches.

As elsewhere in Australia, coaling facilities in Port Adelaide are excellent. The general method is for colliers to tie up to steamships and load straight into the ship's bunkers, although sometimes ships are bunkered from wharves at which coal is stored. Either method leads to rapid coaling operations. Charges and rates same as other Australian ports.

Pilotage: Compulsory. Entering inner harbor, for first 100 tons, £2/10'-, and 11/2d, for each additional ton reg. Maximum £12, inward or outward. For entering outer

harbor, £8, inward or outward.

Port Charges: Tonnage or wharf dues, ½d. per ton per 24 hours. Customs, duty charged on ship stores. Light dues, inward or outward, 3d. per ton register. Vessels discharg-

inward or outward, 3d. per ton register. Vessels discharging part cargo, 1½d. per ton registered tonnage. Berthage, ½d. per ton reg. per day. Other charges, port, etc. Stevedoring: Rates for loading, 1/11 to 4/4 per ton. Rates for discharging, 1/6 to 5/6 per ton. Overtime charges per hour, 1/9 to 2/6. Cost per hour for general labor, 16d. up per hour. Lighterage, very rarely used. Accommodation: Ample wharfage with water alongside up to 32 feet deep. The channel to Port is 23 feet deep at low tide and 32 at high tide. At Port Adelaide there are

at low tide and 32 at high tide. At Port Adelaide there are about 25,000 feet of wharfage while wharves are also at outer harbor for vessels too large to visit Port Adelaide.
Imports: Textiles, apparel, oils, machinery, implements,

timber, motor cars. etc.

Exports: Wool, hides, skins, wheat, flour, fruits, lead,

concentrates.

Names of Importing and Exporting Firms: Elder Smith & Co. Ltd., Geo F. Harris Scarfe & Co. Ltd., Dalgety & Co. Ltd., Wm. Bickford & Sons, G & R Wills, J Marshall & Co. Ltd.

Steamer Lines Using the Port: At present local and interstate; in normal times, all the leading lines running between Australia and Europe. No regular lines from

America call here.

Consular Representation: France, Belgium, Norway. Denmark, Mexico, Italy, Paraguay, Liberia, Switzerland, Peru, Japan, Brazil, Sweden, Netherlands, United States, (Henry P. Starrett, agent).

# PORT ALLEN Hawaiian Islands

Position: Longitude 21 degrees 53 minutes 35 seconds north, longitude 169 degrees 36 minutes 22 seconds west. Population: About 250. Postoffice is Eleele.

Port of Entry for Port Allen is Koloa. Deputy Collector n Charge, George B. Leavitt.

Harbor Master and Pilot of Port Allen, Capt. George

Port Allen is officially listed as Hanapape Bay by the U. S. Corps of Engineers, and by the Postoffice Department. Eleele is the only port at which deep sea vessels can work on the Island of Kauai, the most western island of the Hawaiian group. Kauai is about 125 miles westnorthwest of Honolulu, commercial center of the Hawaiian Islande

The port is located at about the center of the southern shore of Kauai, and Hanapepe Bay, which is really merely a bight in the seashore, is situated at the mouth of a small

river of the same name.

There are no wharves at Hanapepe Bay (or in fact anywhere else on Kauai) at which large steamer or sailing vessels can lie, the only landings available being for rowboats, barges or launches. Depth of water in the bay is from 10 to 50 feet.

All vessels make fast while loading or discharging cargo, to large anchor buoys which have been put in by the Territorial Board of Harbor Commissioners and

securely moored to the bottom.

Deep sea steamers calling regularly at Port Allen include freighters of the Matson Navigation Company and American-Hawaiian Steamship Company. The Inter-Islands Steam Navigation Company's steamers call regularly twice a week from Honolulu. All these boats work cargo by means of small boats and lighters.

Port Allen is an open and unprotected harbor. Two sailing vessels, the bark Ivanhoe and the schooner Prosper, have been wrecked in recent years in the season of kona storms, by dragging their anchors and going ashore. Both were total losses. A third vessel, the bark British Yeoman, was towed to safety by the lighthouse tender Columbine.

The larger cargo vessels anchor in the open bay, usually mooring to heavily anchored buoys installed for their use. The sugar is transported to them in lighters and small boats. Even the small Inter-Island steamers are unable to land at a wharf in Hanapepe Bay. They anchor in the bay and their freight and passengers are lightered to and from them.

# PORT ANGELES Washington

Population (1919), about 5,000. Latitude, 48 degrees 9 minutes north, longitude 123 degrees 25 minutes west.

Distances: Seattle, 78 Miles; Victoria, B. C., 17 miles. Depth of harbor: From 514 to 26 fathoms at mean low tide. Bottom soft gray and green mud.
Harbor master: J. F. Franck.
Mooring buoys: None.

Customs representative: Deputy collector, Frank P. Fisher.

Immigration inspector in charge: Frank P. Fisher.

Bonded warehouse: None.
Customs Broker: R. A. Anderson.
Stevedoring Charges: Lumber—sailing vessels, \$1.50
to \$2.00 per 1,000 feet B. M.; steamers, \$1.40 to \$1.65
per 1,000 feet B. M.

per 1,000 feet B. M.

Wharfage charges: 35 cents per ton.

Docks, piers and wharves: Puget Sound Mills & Timber Co. Quay dock, lumber; deep water landing face, 800 feet; depth at low tide, 26 to 40 feet. Standard Oil Co. dock, 50x60 feet. City dock, public, Port Angeles Transportation Co., 220x300 feet; deep water landing face. 570 feet; depth of water at low tide, 15 to 27 feet. People's wharf, People's Wharf Co., public, 110x600 feet; deep water landing face, 560 feet; deep hof water at low tide, 12 to 26 feet. J. O. Morse's dock (Pier 1), 54x300 feet; landing face, 204 feet; depth of water at low tide, 10 to 20 feet; this also is soon to become a public dock. Sieme-Carey Mill, lumber quay dock, 1,000 foot face, water at low tide, 25 to 45 feet. Steamship lines: Puget Sound Navigation Co., office People's Wharf, L. M. Johnson, agent; steamers Sol Duc, Utopia, Waialeale.

Duc, Utopia, Waialeale.



Towboat companies: Albert T. Johnson Company.

Towhoat companies: Albert 1. Johnson Company, towhoats and lighterage.

Towing charges: For local towing, \$1.50 per hour and up. Puget Sound Standard rates in effect.

Crude oil in large quantities is kept on hand in oil tank cars by Chicago, Milwaukee & St. Paul railway.

Fresh water cost: 30 cents per 1,000 gallons.

Cartage charges: 35 cents to \$1 per ton. Coal, bulk,

\$1 per ton.

Railroad connection: Chicago, Milwaukee & St. Paul railway line reaches and serves all docks. For distance shipments, car ferry is operated between Port Townsend and Seattle by C. M. & St. P. railway.

Industries adjacent to shipping: Puget Sound Mills & Timber Co., exporting lumber and shingle mills.

Little River Logging Co., logging railway and log pier. Filion Mill & Lumber Co., lumber and shingle mills. W. G. Martin & Co., sash, door and furniture factory. Crescent Boxboard Co., boxboard. Angeles Mill co., shingles; Union Fishermens Fishing & Packing Co., salmon cannery, cold storage, frozen, mild cured, canned and salt fish.

Government officials: Acting assistant surgeon, U. S. Marine Hospital and Public Health Service, Dr. F. T. Hyde; weather bureau signal displayman, L. G. Sutton:

British vice consul, James B. Jackson.



View of City and Harber of Port Arthur Copyrighted by Underwood & Underwood

# PORT ARTHUR Manchuria

Population: 26,992.

Port Arthur has ceased to be of much importance, Dairen having taken its place as a commercial port of prominence. A few of the smaller ships only make it a port of call. The port was opened to foreign trade July 30, 1910, having been closed after the signing of the treaty of Portsmouth. The chief imports are provisions, and the only export of consequence is Fushan coal. The harbor has a narrow entrance, with a considerable depth on the east side. There is a dry dock, a shipyard, and several iron foundries.

Pilotage: Compulsory. Rates, vessels under 1,000 gross tons, 5.00 yen for one entrance and clearance; 1,000 to 2,000, 10.00 yen; 2,000 to 3,000, 15.00 yen; 3,000 to 4,000 20.00 yen; 4,000 to 5,000, 30.00 yen; 5,000 and over, 40.00 yen. Sailing vessels pay an additional 50%. Half pilotage rates for changing berth. Gross tonnage is reckoned as six-tenths of displacement tonnage of a vessel.

Accommodation: Open harbor about 460 yards long, and about 320 yards wide, with depth of 18 feet at low water. Ice free the year round.

# PORT CURTIS (See Gladstone) Queensland, Australia

# **PORT DARWIN**

South Australia

Position: Latitude 12 degrees 28 minutes 22 seconds south, longitude 130 degrees 50 minutes 26 seconds east.

Pilotage: Not compulsory. Harbor master boards vessels off East Point.

Port Charges: Light dues, 11/2d. ton of reg. tonnage for charges: Light dues, 1/2d. ton of reg. tonnage for vessels arriving and departing, foreign; vessels arriving and departing, inter-colonial, ld. ton. Jetty 6/ ton, from ship to customs sorting shed. Noting protest, 21/; entering and clearing, 21/ each; com. on disbursement, 21/2% to 5%; obtaining freights, 21/2 to 5.

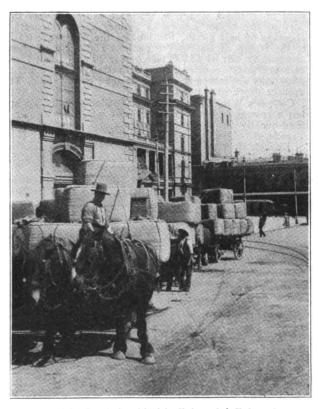
Accommodation: Good, well-sheltered harbor, and easily entered. The entrance is 1½ miles wide, with a depth of 10 to 12 fathoms; depth at wharf, low water, 4 fathoms. Depth at railway jetty, inner end, 22 feet LWST., outer end 36 feet LWST. Traveling crane, capacity 20 tons. Fresh water laid on, 10/ per 1,000 gallons. No dry docks.

Imports: Tobacco, textiles and manufactured fabrics, oils, fats, waxes, machinery, earthenware, cements, china, glass, stoneware.

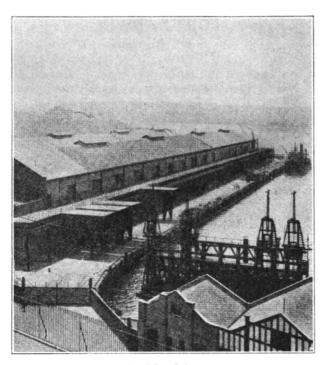
Exports: Gold, silver, tin, copper, wolfram, hides, horns, mother-of-pearl shell, beche de mer, mica, cattle, wool, fish, sheep.

# PORT JACKSON Sydney, New South Wales, Australia

Port Jackson is the most commodious and secure harbor on the east coast of Australia. After passing through the Heads, the harbor can be reached by either the East or West channels. The depth of water in the East channel at low water spring tides is 40 feet, and that of the West channel, now being dredged to the same depth, 21 feet 6 inches, and rise and fall at spring tides six feet, so that vessels of the largest capacity can come in safely at all times. After passing the channels vessels can navigate in 40 to 50 feet of water.



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Jones' Bay, Sydney

Sydney wharves are divided into public, or government, Sydney wharves are divided into public, or government, and private owned wharves. There are five public or government wharves, viz.: Circular Quay, Darling Harbor Wharf, Prymont Jetties, Cowper Wharf, and Admiralty Wharf. The private wharves are in the bight between Dawes and Miller's points, and extend up Darling Harbor; they comprise Walker's, Parbury's, Saywell's, Dalton's, Dalgety's, Central, Town's, Moore's, Adelaide, Smith's, and Grafton wharves, McIlwraith's and Russell's. The Circular Quay Wharf is the most central in Sydney: it is the principle. Quay Wharf is the most central in Sydney; it is the principal government wharf, and almost entirely covers that part of the harbor known as Sydney Cove. It covers a frontage of half a mile. Portions of the wharf are leased to the Ocean Steamship Companies. There are wharfage accommodations of 55,000 feet or for 30 ships, and 12,000 feet are under construction, and vessels of as much as 5,000 tons displacement can be berthed at any time. The average depth of water is 30 feet.

Cowper's Wharf is situated in Woolloomooloo Bay, and has a frontage of 980 feet; depth of water, 18 feet. It is used mostly for the coal, timber and blue metal trade. Vessels can discharge now along the east and west sides of Darling Harbor, and at the south end is Darling Harbor Wharf, which is close by the railway terminus. The wharf is 1,260 feet in length, depth of water about 20 feet.

Every facility is to be obtained at Sydney for repairing vessels of any size or description, with abundant supplies and stores of every kind.

Position: Latitude 33 degrees 52 minutes 41 seconds south, longitude 151 degrees 14 minutes 42 seconds east.

Population: 777,300, including suburbs. Distance from Liverpool 11,974 miles.

Time allowed for discharging: Free lay-days, during which vessels fully-laden, discharging their cargoes at any public or private sufferance wharf, are exempt from the payment of tonnage rates: For vessels not exceeding 100 tons register, 2 days; exceeding 100 tons and not exceeding 200 tons register, 4 days; exceeding 200 tons and not exceeding 300 tons register, 6 days; exceeding 300 tons and not exceeding 400 tons register, 8 days, and for every additional 100 tons, or fractional part of 100 tons, 1 day; excluding Sundays and public holidays in every case. A excluding Sundays and public holidays in every case. A proportionate number only of the above free lay-days will be allowed in the case of vessels part laden.

Pilotage: Compulsory. Rate 2½d. per net reg. ton for first 5,000 tons and 1d. for each additional net ton, in-

wards or outwards. Arriving or departing in ballast half

Port Charges: Light Dues, State, N. S. W. Harbor and Light Rates are 4d. per ton on net reg. payable every six months. Commonwealth: in addition to the State Dues, Commonwealth Lighthouse rate @ 9d. per ton on net reg. is payable which exempts vessel from further payment for 3 months irrespective of the number of ports the vessel calls at in the Commonwealth during of ports the vessel cans at in the Commonwealth Galling this period. Sydney may not be the first port of call in the Commonwealth and in that case Commonwealth Light Rates would be paid at first port of call. Water, 2/- per ton from water boat and 2/- per 100 gallons taken at wharf. Cost of ballast, loading, 2/6 per ton. Cost of removing ballast ranges from 3/- to 4/- per ton.

Tonnage of wharf dues; 1/8d. (one eighth of a penny) per ton gross for period of six hours. Wharfage dues on cargo imported 3/- per ton measurement of 40 cubic ft., 4/- per ton dead weight payable by consignees. If cargo is for transshipment at Sydney, only 6d. (six-pence) per ton is charged if paid within 48 hours of arrival of cargo. Stevedoring and Lighterage, Rates for loading cargo:

Wool, 1/9d per bale; other bale cargo, 2/- per bale; general merchandise, 4/- per ton; weight or measurement. Rates for Discharging Cargo, timber 2/9 per 1,000 feet super, general merchandise 2/3 per ton; weight or measurement. Overtime—Cost per hour, half ordinary rate extra, 2/7½d per hour; Mealtime rates, 2/- per hour from time of commencement of the men's meal hour until he is extra, 2/7½d per hour; Mealtime rates, 2/- per hour from time of commencement of the man's meal hour until he is relieved; Holidays, 3/6d per hour; Cost per Hour for General Labor, 1/9d per hour; Lighterage, cost per ton, individual packages: Under 2 tons, 3/6d per ton weight or measure; Over 2 tons weight, special arrangement; Demurrage is charged at the rate of 3d per ton per day; Minimum charge, 50 tons: Lighterage, cost of lighter per day, 15/- per 100 ton deck lighter per day; towage to be add by hirar; Ships discharging in extreme ships to pay paid by hirer; Ships discharging in stream—ships to pay for time running men to and from work and traveling expenses; Other charges, sorting and stacking-to be paid by consignee; Oversea, general rate 10d per ton weight or measurement; Interstate, general rate, 1/- per ton, weight or measurement.

### Steamer Lines Using the Port

(Overseas): Orient Line of Royal Mail Steamers, London; P. and O. Steam Navigation Company, London; Canadian-Australian R. M. Line, Vancouver; Union Steamship Company's R. M. Line, San Francisco; Messageries Maritime Cie, Marsailles; Royal Packet Navigation Company (Dutch Line), Batavia; Australian Oriental Line, China; Oceanic Steamship Co., Ltd., San Francisco; New Zealand Shipping Co. Ltd.; Osaka Shosen Kaisha, Japan; The Ellerman and Bucknall S. S. Co., Ltd.; Nippon Vuser, Kaisha, Japan; Burne Philo & Co. Ltd.; R. Nippon Yusen Kaisha, Japan; Burns Philp & Co., Ltd's R. M. Line, India & Pacific Islands; American and Australian Line, India & Pacine Islands; American and Australian Line, America (N. Y.); Commonwealth Line, Commonwealth and Dominion Line, Liverpool and New York; White Star Line (Liverpool), Liverpool; White Star Line (Aberdeen), London; Federal and Shire Line of Steamers, Manchester, Liverpool and Bristol; Luckenback Line, America; Cunard Line, Liverpool and New York; The Trans-Atlantic S. S. Co. Ltd. Cothenburg: United States Trans-Atlantic S. S. Co., Ltd., Gothenburg; United States and Australasia S. S. Co., America; Ocean Transport Co. Ltd., Japan; British India S. S. Co., India; Eastern and Australian Line, China and Japan; Blue Funnel Line, Glasgow; P. and O. Branch Line, London.

Glasgow; P. and O. Branch Line, London.

The vessels of all these lines call at intermediate ports. Pilots detained in quarantine will be paid £1 per diem, 8s. of which will be charged to the vessel, in accordance with Act 3, Wm. IV., No. 6, Sec. 6.

Harbor removal dues: Vessels not exceeding 300 tons. £1; 300 to 400, £1 5s.; 400 to 500, £1 10s.; 500 to 600, £1 15s.; 600 to 800, £2; 800 to 1,000, £2 10s., and an additional £1 for every additional 500 or part of 500 tons up to a maximum of 2,000 tons.

### Berthing Rates and Navigation Charges.

Berthing rates are charged as follows: On vessels over 240 tons net register:

(a) In respect of the first six days (exclusive of Sundays and days observed in the public offices in Sydney as



holidays) after time of berthing 1/2d, for each ton of the register tonnage of the vessel up to 5,000 tons, and ¼d. for each ton over 5,000 tons for each complete day of 24 hours or day of over 18 hours, or one-fourth, one-half and three-quarters of such rate for parts of a day of or less than 6, 12, and 18 hours respectively.

(b) Tonnage in respect of each such subsequent day or part of a day, half the above rate.

As most of the principal wharves vested in the commissioners are leased by them to shipping companies the tonnage rates on vessels owned by, chartered by, or consigned to the lessees are not charged as they accrue, but are accounted for in rent. To lessees so assessed a concession has been made according to which lessees can berth their vessels at one another's wharves free of tonnage rates.

Wharves that are not leased are regarded as "open" berths, and all vessels berthing thereat are charged tonnage rates.

Customs: Protective tariff.

Names of Importing and Exporting Firms: S. Hoff-Names of Importing and Exporting Firms: S. Hoffnung & Co. Ltd., Holdsworth, Macpherson & Co., A. Hordern & Sons Ltd., F. Lassetter & Co. Ltd., Nock & Kirchip Ltd., Scott Henderson & Co., Gilbert Lodge & Co., J. J. Sullivan Ltd., Henry Bull & Co., A. Cowan & Sons Ltd., Edwards Dunlap & Co., W. D. & H. O. Wills (Aus.) Ltd., Polit & Co. Ltd. Bealen Hill Day Ltd. H. Logge & Co. Birt & Co. Ltd., Broken Hill Pty. Ltd., H. Jones & Co., W. Arnott Ltd., Bellambi Coal Co.

Accommodation: Spring tides 5¼ feet; neap tides 4 feet. The least water now found in the E. Channel is 40 feet, at berths 18 to 35 feet, LWOST, Sydney is about 4 miles from the Heads. Four graving docks, five floating docks and three patent slips. Cranage accommodation at various wharves with lifting capacity up to 160 tons at H. M. Docks. There are a number of wharves fitted out in the port with cranes for loading coal, also a number of berths fitted with gantries for loading of wheat.

Imports: Steel, galvd. iron, galvd. pipe, black pipe, timber, motor cars, tools of trade, machinery, tobacco, spirits, drugs, chemicals, rubber, metal manufactures, cinematographs, pianos, clocks, watches, yarn, canvas and duck, carpets, cordage and twines, books, boots and shoes, sewing machines, wearing apparel, rosen, varnishes, paints, oils, glass, paper, nail wire, fence wire, motor goods, phone goods, piece goods, tinned fish, barley, maize, cocoa and chocolate, hardware

Exports: Wool, wheat, flour, leather, hides, skins, tallow, gold, silver, concentrates, lead, copper, molybdenite and other ores, tin, wolfram, coal, coke, glue pieces, glycerine, timber, meats, bacon, hams, rabbits, potatoes, biscuits, butter, cheese, jams, jellies, wines, dried fruit, horses.

The export of wheat is at present controlled by the Australian Wheat Board and wool by the Central Wool Committee acting for the Commonwealth Government.

### Consuls

(All Sydney except where stated otherwise.)

Argentine Republic, South America: Consul General in Australia, J. T. Tillock, J. P., corner Liverpool and

Belgium. Maurice Watteeuw, Consul, 14 Castlereagh St. Brazil: E. W. T. Dunn, Consul General, 3 Spring St. Canada: B. Millin, J. P., commercial agent, corner Pitt and Bridge Sts

Chile: Wm. Brown, Consul, 4 O'Connell St.

China: T. K. Tseng, Consul General, Melbourne, Vic-

Columbia Republic (of South America): Carlos H. Simmonds, Consul, 188 Castlereagh St.

Cuba: Alfredo L. E. Y. Reyes, Melbourne. Denmark: Otto Wadsted, Consul, W. E. Hawkins, Acting Consul, 88 Pitt St.

Ecuador: James Clark, Consul, 59 Pitt St.

France: A. Chayet, Consul General; George Step, Chancellor; Bond St. Chambers, 2 Bond St.

Greece: S. S. Cohen, Consul General, Sydney.

Honduras: Frederick Walsh, J. P., Consul General. corner George and Wynyard Sts.

ner George and Wynyard Sts.

Italy: Dr. C. B. Marno, C. A., 233 Macquarie St.
Japan: S. Shimizu, Consul General in Australasia; E.
Amau, Vice Consul; K. Naito, Chancellor; E. W. Foxall,
English Secretary, Twyford Chambers, 17 Castlereagh St.
Netherlands: H. J. W. Huber, Consul; N. H. Paling,
Vice-Consul; 56-58 Hunter St.
Nicaragua: Vesey R. Gosche, J. P., Sydney.
Norway: M. Arne Scheel, Consul General; Olav E.
Pauss, Consul, 38 Pitt St.
Panama Republic: Hon A. Coote Atherseum Club 14

Panama Republic: Hon. A. Coote, Athenaeum Club, 14 Moore St.

Paraguay: F. A. Royle, J. P. (N. S. W., Victoria and Queensland), Consul General; C. B. Boucher, J. P., Vice Consul; Royal Chambers, Bond St.

Peru; Senor J. M. De Macedo, Consul General for Aus-

Peru; Senor J. M. De Macedo, Consul General for Australia. John M. Paxton, J. P., Consul, 4 Daley St.
Portugal: F. W. Clarke, Consul, 58 Margaret St.
Russia: T. A. Welch, Consul, 85 Clarence St.
Spain: T. J. Dalton, Hon. Vice Consul, 525-7 Kent St.
Sweden: Hon. S. T. Von Goes, Consul in Chief to
British Australasia. J. H. Andersson, Vice Consul; I.
MacIntyre, private secretary, The Albany, Macquarie St., Sydney.

Switzerland: M. Rutty, Consul, 58 Margaret St.
United States: Joseph I. Brittain, Consul General of the
United States of America. Eli Taylor, Vice Consul, Mutual Life Bldg., 14 Martin Place.

Venezuela: J. M. Paxton, J. P., Consul, 4 Daley St.

### Sydney Harbor Trust Wharfage Rates

The commissioners shall demand, collect, and receive, subject to the exemptions and deductions hereinafter in this Act specified, inward and outward wharfage rates to be fixed as hereinafter provided, upon all goods:

(a) unshipped from any vessel berthed at a wharf, dock, pier, jetty, landing stage, slip, or platform in the port, vested in the commissioners; or

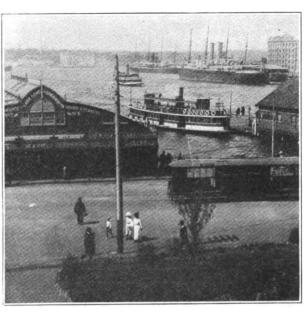
(b) received on any such wharf, dock, pier, jetty, land-

ing stage, slip, or platform, for shipment on a vessel.

The following exemptions, refunds, and deductions shall be made and allowed:

(a) Goods of His Majesty and passengers' luggage shall be exempt from all wharfage rates.

(b) Goods unshipped from any vessel to any other vessel for conveyance to another port shall not be subject to inward or outward wharfage rates if a transhipment entry in respect thereof is duly passed at the custom house



Circular Quay at Sydney-Copyrighted by Underwood & Underwood

within 48 hours after the time at which the discharging vessel has reported at the custom house; but in the case of vessels engaged in the state or interstate coastal trade, and in respect of which transhipment entries are not so passed as aforesaid, it shall be a sufficient compliance with this paragraph if such entry is, within the said time, lodged with the commissioners.

(c) Any amount paid as inward harbor rates on any goods may be deducted from any inward wharfage rates

payable in respect of the same goods.

(d) Any amount paid as outward harbor rates on any goods may be deducted from any outward wharfage rates payable in respect of the same goods.

(e) Where outward wharfage rates are paid on goods received for shipment but not shipped, the commissioners

may refund the amount so paid.

(f) The commissioners may exempt any goods or classes of goods from inward or outward wharfage rates, and may reimpose and fix, under this Act, wharfage rates on such goods.

The commissioners shall, by regulations which they are authorized with the approval of the Governor to make, fix

the amount of such wharfage.

Such wharfage rates, whether inward or outward, may be by weight or measurement, in the discretion of the commissioners, but inward wharfage rates shall not exceed four shillings per ton by weight or three shillings per ton of 40 cubic feet measurement, and outward wharfage rates shall not exceed half that sum.

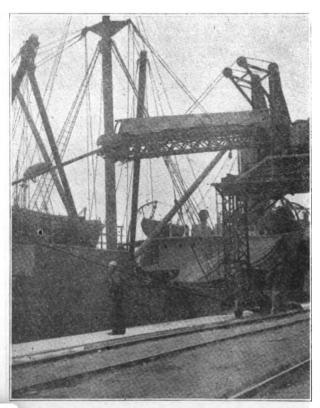
Fixed rates may also be imposed by such regulations on specified articles or packages, and in such case the rate on any article or package shall be so as not to exceed the maximum rate above prescribed by weight or measure-

ment, whichever is the larger.

Provided that a minimum rate, not exceeding three-

pence, may be fixed for any article.

Towards meeting the expenditure annually incurred in dredging, lighting, improving and maintaining the Port of Sydney, the commissioners may demand, collect, and receive inward harbor rates on all goods brought by sea into the said port, and outward harbor rates on all goods shipped on any vessel in the said port;



Loading Wheat-Copyrighted by Underwood & Underwood

Provided that goods of His Majestv and passengers' luggage shall be exempt from such rates.

The inward harbor rates on any goods shall not exceed the inward wharfage rates which would be payable on the same goods if unshipped from a vessel berthed at a

wharf of the commissioners.

The outward harbor rates on any goods shall not exceed the outward wharfage rates which would be payable on the same goods if received on any wharf vested in the commissioners for shipment on a vessel berthed at any

such wharf.

Provided that on goods transhipped in the said port an amount, to be fixed by the commissioners, not exceeding one-half of the inward harbor rates shall be payable, unless the goods are landed on a wharf or other place, and the transhipment does not take place within fourteen days after the landing, in which case double the amount so fixed shall be payable. On goods so transhipped no outward harbor rates shall be payable.

Inward and outward harbor rates shall be paid by the

owners of the goods as defined in the Sydney Harbor Trust Act, 1900.

Inward harbor rates shall be paid before the landing or transhipment of the goods.

Outward harbor rates shall be paid before the vessel

leaves the port. If any such rates are not paid, the person liable to pay

the same shall be liable to a penalty not exceeding 50 pounds.

If default is made in the payment of harbor rates on such goods, the commissioners may retain and sell them or any of them, and, after reimbursing themselves for the payment of any customs duties, and any freight due on the goods, and any expenses of sale, shall retain and pay the said harbor rates, rendering, on demand, the surplus (if any) and such of the goods as are unsold to the person entitled thereto.

The commissioners may, with the approval of the Governor, make regulations for the collecting of harbor rates under this Act and for carrying out the provisions of this

Act in relation to such rates.

The master of a vessel shall, before such vessel leaves the port of Sydney, lodge at the offices of the commissioners a true and complete outward manifest; and if he fails to do so he shall be liable to a penalty not exceeding

The owner of every ship requiring a survey or certificate under the Navigation Act shall pay for every such survey such sum as the superintendent appoints, not ex-

ceeding the sums following, that is to say:
For ships not exceeding 50 tons register, 2 pounds. For ships from 50 to 100 tons register, 4 pounds. For ships from 100 to 300 tons register, 6 pounds. For ships from 300 to 600 tons register, 8 pounds. Every additional 300 tons, an addition of 2 pounds. Maximum fee in any case, 20 pounds.

The tonnage rates to be levied shall be at the rate of 1/2 penny for each ton of the gross tonnage measurement of the vessel for each complete period of 24 hours, and for periods of less than 24 hours at the rate of 1/8 of a

penny for each period of six hours or part thereof.

The latest publication of Lloyd's Register shall be evidence of the tonnage of all vessels mentioned therein. Provided that, where the certificate issued in respect of such survey is for a period of six months or less, not

# PORT LYTTELTON New Zealand

more than one-half the above sums shall be charged.

Position: Latitude 43 degrees 36 minutes 42 seconds south, longitude 172 degrees 44 minutes 17 seconds east.

Population: Lyttelton, 4,058; Christchurch, 80,523.

Pilotage: Compulsory. Charges on sailing vessels over 100 tons reg., 334d per ton inwards and 3½d per ton outwards; steamers over 100 tons reg., 234d per ton inwards, 2½d per ton outwards. No charge on second visit of same voyage. Towage: Sea towage, to a distance of 5 miles outside the Heads, or from sea 7 miles, rises, according to





View of Harbor of Port Lyttieton

tonnage, from 5 pounds sterling for 150-ton vessels to 26 pounds for a 2,000-ton ship. Towage removals are proportionally low and vary from 1 to 9 pounds, according to tonnage. When towage from sea exceeds 7 miles outside the Heads an additional charge of 5 pounds per hour is made. Work inside harbor, 4 pounds per hour.

Port Charges: 3d per ton reg. Intercolonial vessels not to exceed 1 shilling half-yearly. Coastal vessels, ninepence half-yearly. Berthage, 1/4d per ton reg. per day, with maximum charge of three days, while a vessel remains in the inner harbor of the Port of Lyttleton. Light dues, overseas steamers, 4d per ton net reg.; British sailers, 4d per ton; foreign sailers, 6d per ton; costal steamers, ¼d per ton. Wharfage dues, general, 1/9 per ton (by weight or measurement): Agriculture produce, 7½d per ton; frozen meat, etc., 6d per ton; wool, 10½d per bale; timber, 3½d per 100 feet superficial; coal, 9d per ton. Transshipment goods are free and re-shipped goods are also free of outward wharfage on declaration.

Stevedoring: Rates for discharging general cargo work, including lime and cement in casks, 1/10; special cargoes in bulk, when in quantities of more than 25 tons in a ship, outs, when in quantities of more than 25 tons in a ship, 2/3; special cargoes in bags, when in quantities of more than 25 tons in a ship, 2/. Case oils, 2/ per ton. Loading: Mutton, 14/6 per 100 carcases; cheese, 20/— per 100 crates; wool, 1/3 per bale; grain, 1/10 per ton; general cargo, 2/3 per ton. Casks, tallow, pelts, etc., 3/— per ton. Overtime cost per hour varies from 2/8 to 3/5 on foregoing class of cargo. going class of cargo.

Accommodation: A lighted whistling buoy is moored off the entrance to the port, situated ten cables from Gidley Head and 7½ cables from Adderley Head. Two

breakwaters, one 2,010 feet long and 40 feet wide, and the other 1,400 feet long. Area of water inclosed by breakwater, 160 acres. Depth of water in inner harbor varies from 20 feet to 33 feet at low tide. Vessels drawing 31 feet can leave at high water. Channel from Outer Harbor to entrance between moles, 29 feet at low water or 33 feet at high tide. Rise of tide, 6½ feet; spring, 4½ feet neap. Vessels of over 12,000 tons can enter and berth safely at several wharves. Berthage space for vessels within inner harbor served by railway lines: 8,485 feet, with 33 feet at low water, 2,225 feet with 28 feet at low water, 700 feet with 18 feet at low water. Goods consigned to Christchurch or country stations are landed directly into railway trucks, all jetties and wharves having tracks laid down upon them. Stores available for grain, benzine, kerosene.

Imports: General merchandise, etc. Exports: Frozen meats, wool, grain.

Names of Importing and Exporting Firms: Forbes, Ltd., Lyttelton, Dalgety & Co., Ltd., Quaine & Co., Ltd., Neill & Co., N. Z. Farmers' Co-operative Association, Ltd., Sargoods Ltd., National Mortgage & Agency Co., N. Z. Loan & Mercantile Co., Kaye & Carter Ltd., Edward Reece & Co., Ashby Bergh & Co., Whitcomb & Tombs, Ltd. Steamer Lines Using the Port: Federal & Shire S. S. Co. Ltd., N. Z. Shipping Co. Ltd., Shaw, Savill & Albion Co., Commonwealth & Dominion S. S. Co. Ltd., Union S. S. Co. Ltd., Huddart Parker Propy Ltd. Trade with United Kingdom, India, Canada and Australia.

Consular Representation: United States, Denmark, France, Norway, Sweden.
Distance to Christchurch, 7 miles. Connected by railway.

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# PORT MANN **British Columbia**

Port Mann, 4.4 miles east of New Westminster, is the divisional point of the Canadian Northern Ry., where they have docks of sufficient depth to take care of ocean-going vessels. Freight between main line and Vancouver Island is handled by barge service between Port Mann and Patricia Bay.

# **PORT PHILLIP** Victoria, Australia

Position: Latitude 37 degrees 49 minutes 53 seconds south, longitude 144 degrees 58 minutes 32 seconds east. Accommodation: Minimum depth at low water 37 feet along line of leading lights in fairway and for 2,000 feet eastward; also for 700 feet westward of line.

Pilotage: Charges same as Melbourne. Port Charges: Same as Melbourne.

## **PORT PIRIE** South Australia

Position: Latitude 33 degrees 11 minutes south, longitude 138 degrees 1 minute east.

Population: 12,000.
Pilotage: Compulsory. Charges, £3 per 100 tons, per ton above 2d. maximum, £15 15s inwards and outwards. Mooring, £2; removals, £5 to £7 10s; unmooring, £1. Towage steamers, large tug, £15; small tug, £7 10s.

age steamers, large tug, £15; small tug, £7 10s.

Port Charges: Dues on vessels from beyond Australasian Colonies, 3d. per ton inwards and outwards. Commonwealth light dues, 8d. per ton for 3 months. Vessels from ports within colonies, 1½ d. per ton, inwards and outwards. Maximum 6d. per ton for Port dues in any six months. Tonnage on sailing vessels 3d. per ton; steamers, 1½d. Loading and discharging general and ballast, 1/2 to 1/6; grain, 1/11 per ton; wool 1/2 to 1/3 per bale. Commonwealth light dues, 8d. per reg. ton for 3 months, maximum, £150.

Accommodation: Wharves are plentiful. Channel 250

Accommodation: Wharves are plentiful. Channel 250 feet wide; depth at LWST. 18 feet, depth at berths, 18

feet to 20 feet.

Imports: Timber, coal, coke, general. Exports: Wheat, flour, ores (silver and lead). Rail communication with Adelaide, distance 169 miles.

# PORT ROCKHAMPTON

Queensland, Australia

Position: Latitude 23 degrees 24 minutes south, longitude 150 degrees 30 minutes east.

Population: 21,000.

Pilot Charges: Same as Brisbane, Port Charges: Berthage, 1/2d. per ton per day on net reg.

State dues same as Brisbane.

Accommodation: Anchorage, alongside wharf and at Port Alma (Keppel Bay), 37 miles from Rockhampton. Train conveys passengers' luggage and cargo to the city. Depth of water alongside Rockhampton Wharf, 18 feet at low water; at Port Alma Wharf, 27 feet at low water. Every facility is offered for handling any class of cargo at both these ports.

Rockhampton is in the state of Queensland on the eastern coast of Australia. The district surrounding Rockhampton embraces extensive mining and agriculture interests. The port handles a considerable quantity of the 200,000 tons of sugar produced yearly in the province. Abundant crops of pineapples, oranges, peaches, grapes, bananas, cocoa-

nuts, mangoes, and plums are also grown.

# PORT STEPHENS New South Wales, Australia

Position: Latitude 32 degrees 42 minutes 30 seconds south, longitude 152 degrees 11 minutes 45 seconds east.

Accommodation: Harbor of refuge, easily accessible.

Port charges: Same as Newcastle.

## PORT SWETTENHAM

### Straits Settlements

Position: Latitude 3 degrees north, longitude 101 degrees 23 minutes east.

Population: Mixed; English, Chinese, Malay, Tamil. Pilotage: Not compulsory.
Port Charges: None.
Stevedoring: Rates for loading and discharging cargo, 60 cents per ton. Overtime cost per hour, 15 cents per man. Cost per hour for general labor, per half day 60 cents. Lighterage, cost per ton, nil. Lighter-

age, \$15 per day for hiring lighter.

Accommodation: No docks. One wharf 900 feet long with 30 feet of water at low water, ordinary spring tides. Three wharves each 100 feet long with 10, 12 and 15 feet of water at low water, ordinary spring tides. tides. Three sets of moorings are laid down for the accommodation of ocean steamers up to 550 feet in length of a depth of 30 feet.

Imports: General merchandise and foodstuffs.

Imports: General merchandise and foodst Exports: Rubber, tin, copra, wolfram-ore.

Names of Importing and Exporting Firms: Boustead, Hampshire & Co. Ltd., A. C. Harper & Co. Ltd., Harrisson & Crossield Ltd., Guthrie & Co. Ltd., Planters Stores & Agency Co. Ltd., Paterson, Simons & Co. Ltd.

Steamer Lines Using the Port: Ocean Steamship Co. Ltd., British India Steam Navigation Co. Ltd., Glen Line, Shire Line, Ben Line, Straits Steamship Co. Ltd., Osaka Shosen Kaisha, Eastern Shipping Co. Ltd., Ellerman Hall Line and City Line.

Consular Representation: None.

# PORT TOWNSEND Washington

Position: Latitude, 48 degrees 8 minutes north, longi-

tude, 123 degrees 6 minutes west.

Population: 4,600. Depth of harbor: 40 to 60 feet. Harbor master: C. H. Morrison.

Mooring buoys: None.

Customs brokers: Rothschild & Co.

Docks: Three wooden wharves, capacity of each 500

Oil Dock: Standard Oil Co., Depth of dock, 26 feet. Railroad connection: C. M. & St. P. Ry., local line

List of Charges Wharfage: 50 cents per ton. Cartage: 40 to 50 cents per ton.

Anchorage: None.
Towing and lightering: Same as elsewhere on Puget Sound.

Stevedoring: Wheat, 30 cents per ton; lumber, \$1.00 to \$1.30 per M. board measure.

Water: First 5,000 gallons, \$3.00; after that, 14 cents per 1,000 gallons.

# **PORTLAND**

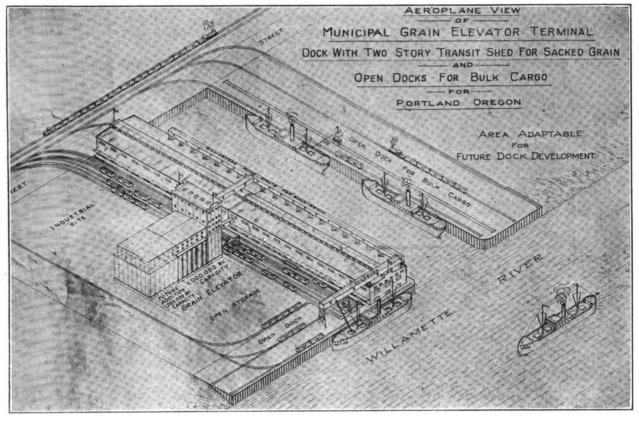
Position: Latitude, 45 degrees 31 minutes 8 seconds north, longitude, 122 degrees 40 minutes 31 seconds west.

Population: 335,000.

At the entrance of the Columbia River, from survey of the United States Engineers, made December, 1918, there is now a depth at low water of over 40 feet for a width of 2.640 feet and protected by rock jetties. The main channel between Portland and the sea is constantly being improved and maintained by both the Federal Government and a local municipal corporation called the Port of Portland poration called the Port of Portland.

The Federal Government in 1903 adopted a project

for maintaining a minimum depth of 40 feet at mean lower low waters for a width of not less than a half



Municipal Grain Elevator Terminal

mile at the entrance of the Columbia River and a minimum depth of 30 feet at zero in the channel of the Columbia and Willamette Rivers at Portland.

The project depth at the entrance of 40 feet was attained and has existed continuously since 1916, as also the 30 ft. depth from the sea to Portland.

Portland is situated 110 nautical miles east and

Portland is situated 110 nautical miles east and south from the entrance to the Columbia River at the confluence of the Columbia and Willamette Rivers. The harbor is formed of the waters of the latter stream and has about 27 miles of shore line, along which the commercial houses and wharves are located. There is from 30 to 60 feet of water in the fairway, which is from 1,000 to 1,800 feet wide. No mooring buoys are necessary. The entire shore line is unusually well supplied with trackage facilities. At low water periods, the extreme rise and fall of the tide is from two to two and one-half feet. At high water periods there is no tide.

Portland is peculiarly and advantageously situated with regard to the distance from and between it and other ports. Being at the head of ocean going transportation, large vessels are enabled to penetrate far into the interior of a rich producing country, and close to the originating points of the main staple commodities of the Northwest.

# Columbia River Pilotage and Towage Rates Bar Pilots

Competent pilots are available at all times both at river entrances and at Portland. The pilots are supervised by a state commission and fees limited by law.

Steam vessels: The bar pilotage rates on steam vessels entering or leaving the Columbia River when the Port of Portland furnishes a bar pilot will be \$1.50 per foot draft and 1 cent per ton net registered tonnage in each direction.

The same rate to apply on sailing vessels not towed by the Port of Portland when their pilot is aboard.

### River Pilotage

For piloting a vessel upon the river pilot ground between Astoria and Portland, whether ascending or descending, all vessels shall pay \$1.00 per foot draft and 1½ cent per ton registered measurement; and the board is authorized to prescribe a proportionate compensation for pilot service between other points on said ground or from one part of the dock to another part of the same dock; the charge therefor shall be a sum not exceeding \$7.50 and the pilot shall on being thereunto requested by the master of the vessel be required to do such work for such compensation. Provided, however, it shall be optional with the master or person in charge of such vessel whether he accepts or demands the service of any such pilot; and if the master or other person in charge of any vessel declines to accept services of a pilot on the river ground aforesaid, the vessel shall not be liable for pilotage.

Vessels towed from the sea to Astoria and return only, will be charged 70 percent of the round-trip rate to Portland as named above.

Oil barges, loaded, towed from the sea to Astoria only, will be charged 52½ per cent of the round trip rate from the sea to Portland, as named above.

Vessels entering the Columbia river in ballast and departing without cargo, and vessels entering for fuel or supplies for use of the vessel so entering, will be towed from sea to Astoria and return for 25 per cent of the rate charged from sea to Portland and return.

#### Towage

The towage service between Portland and sea is operated by the Port of Portland Commission, a municipal corporation, and its public nature makes it possible to give service regardless of cost. Profit on this service is not expected or received.

A public dry dock is operated by the Port of Portland Commission. This dry dock is capable of handling vessels 500 feet long. It is sectional and more than

one vessel of the smaller class can be handled without interference. Plans are under way for an additional section to make a total of six sections with a total length of 550 feet.

Towage rates quoted are for round trip, continuous in each direction, and subject to conditions of this

tariff

#### All Sail Vessels

between Sea and Portland, Oregon.	
Vessels of: Rate	
Up to 400 tons net register\$300.0	00
401 to 550 tons net register 3/5.	w
551 to 750 tons net register 450.0	JU
751 to 1000 tons net register 550.0	
1001 to 1200 tons net register 600.0	
1201 to 1500 tons net register 650.0	
1501 to 1800 tons net register	
1801 to 2000 tons net register 750.0	
2001 to 2500 tons net register 800.0	
2501 to 3000 tons net register 850.0	
3001 to 3500 tons net register 900.0	)0
3501 to 4000 tons net register 950.0	0
Between Sea and Following Points:	
Astoria, Knappton 70% of Portland Rai	te
Westport, Stella, Mayger,	
Skamokawa 85% of Portland Rai	te

St. Helens, Columbia City ... 95% of Portland Rate Linnton, St. Johns, Vancouver. Same as Portland Rate Minimum round trip tow \$250.00 to any point. Points

not named take same rate as nearest point named.

Vessels towed under provisions of this tariff and stopping or loading at more than one point, will be charged on tariff basis for tow from sea to point of first berthing, and on tariff basis from point of last berthing to sea; all intermediate moves to be made by the Port of Portland at charges consistent with distance, size of vessel and conditions existing at the time service is rendered.

### Moves in Harbor at Portland

(Rates are for each tug used)

(Rates are 101	Sailing Vessels		rs and iliary Vessels Over 1500 Gross Tons
Moves within area between Swan Island and O. W. R. & N. Bridge, or within area between Linnton and Swan Island, or within area between Hawthorne Ave. Bridge and Ross Is- land Moves from or to points in area between Swan Island and O. W. R. & N. Bridge to or from points below Swan Island as far as Linnton, or points above	\$20.00	\$25.00	\$35.00
O. W. R. & N. Bridge as far as Ross Island, or moves in area between O. W. R. & N. and Hawthorne Ave. Bridges  Moves from or to area between Swan Island and Linnton; to or from points above O. W. R. &	30.00	35.00	45.00
N. Bridge as far as Ross Island	in the are W.R.&	ea between N. Bridge	n Port- e. The

#### Motor or Auxiliary Power Vessels

Vessels with auxiliary power will be towed or convoyed, between sea and anchorage inside Columbia River, if vessel's power is used during movement, at rate of \$125.00 for assistance in each direction. If towed without assistance of vessel's power, towage rate of sail vessels will apply.

vessels entering the Columbia River in ballast and departing without cargo, and vessels entering for fuel or supplies for use of the vessel so entering, will be towed from sea to Astoria and return for 25 per cent of the rate charged from Sea to Portland and return.

# Dry Dock Rates Steam or Power Vessels on Gross Tonnage

		D
	First Day	Lay Days
	cents	cents
	per	per
	ton	ton
Up to 999 tons	18	10
1000 to 3999 tons		10
4000 tons and over		10
Sailing Vessels on Net To	nnage	
Up to 599 tons	18	10
600 to 999 tons	16	10
1000 tons and over		10

# Sea-Going Barges and Dismantled Ships Same rate as sailing vessels.

#### Scows and Barges

(Except Sea-going Barges and Dismantled Ships)
First Lay
Day Days
00x25 or equal to 2500 eq. ft. deck area \$300 \$10.00

2. Docking charges include use of dock for twenty-four hours from time deck of dock is above water. Twenty-four hours or less constitutes the first day.

3. Twenty-four hours or more than five hours constitutes one lay day. Five hours or more than one hour constitutes one-half lay day. Minimum charge, \$50.00.

4. Vessels in any class will have the advantage of the minimum charge in the next larger tonnage class.

5. Cargo will be charged for at 50 per cent of tonnage rates. No charge made for ballast.
6. In case a vessel is raised or lowered on Sunday

6. In case a vessel is raised or lowered on Sunday or a holiday, or after working hours, a charge for overtime, labor and other additional costs will be made against the vessel.

made against the vessel.
7. No charge will be made for vessels in Dry Dock on Sunday or holiday unless work is performed on the vessel, in which case regular rates will apply.

8. Wrecked or other vessels requiring extra blocking will be charged for the additional labor and material required in preparing and clearing the dock; a charge will likewise be made for all keel and bilge blocks damaged by removal to effect repairs to a vessel.

9. All bills are due and must be paid when vessel is undocked. Berth rates: Waiting, free. Laying up, \$1.00 per day per thousand gross tons or fraction thereof.

### Dimensions of Sectional Dry Dock

(Pive Pontoons)		
Length	468	feet
Width between wings	82	feet
Depth of water over keel blocks	25	feet
Lifting capacity, tons dead weight		

### 10-Ton Electric Derrick

An electric derrick of 10 tons capacity, placed on the wharf at the west end of the dock, is available for lifting propellers, tail shafts, etc., and for other purposes.

There is a small shop on the dock containing an electrically-operated air compressor, a radial drill, large blacksmith forge, lathe, shaper and other tools.

Compressed air for operating air tools and 500 volt direct current, electricity for operating electric tools, will be supplied according to the accompanying schedule.

The contractor or the ship must hire and pay the mechanics direct, as the Port of Portland does not do any repair work on vessels.

Machine Shop Rates for Use of Tools

Per Hou
Blacksmith forge, without coal \$0.5
Electric derrick, with engineer while being used
(minimum charge \$5.00) 1.5
Air compressor, based on number of tools 75c to 1.5
Lathe
Buzz planer
Band saw
Shaper
Radial drill
Hack saw
Above charges do not include the services of
mechanics.

Water will be furnished at 30c per thousand gallons,

with a minimum charge of \$2.50.

Vessels requiring the dock more than four weeks will be allowed to have same only by special arrangement with The Port of Portland Commission.

Electricity will be charged for at current rates.

#### Rules and Regulations

1. All vessels requiring the use of the dock or wharves must furnish men to handle the vessel, and warp it into and out of the dock, also furnish all hauling lines, and lines to steady the vessel while being docked.

2. All vessels using the dock or wharves must at

all times keep the same clear of dirt and rubbish, and thoroughly clean, and sweep the dock before the vessel

is floated.

3. Sufficient stage planks, spauls and trestles to go around vessels while on the dock will be furnished by the dock on application to the superintendent. Vessels will be required to furnish all ropes for hanging stages. No ropes or chains of any kind will be furnished by the dock. Vessels or contractors may bring their own staging to the dock, but must remove same from dock and wharves upon completion of the works.

4. All water closets and urinals on vessels shall be locked up or fastened securely, and not used while the vessel is in the dock under penalty of twenty dollars for infraction of this rule. In the event of any infraction of this rule, both the vessel and the owners shall be liable for said penalty, and the same shall be included in, and form a part of, the charges against the vessel and owners for the use of said dock.

5. All vessels, while using wharves or docks, shall furnish and display lights during the night time, at each end of all gangways in use.

6. All vessels lying at the wharves of the dry dock shall move at any time they are requested to do so by the superintendent or his representative.

7. Vessels to be docked must be put on an even

keel, abeam, and as nearly as possible on even keel fore and aft. This rule is imperative and vessels will

not be docked unless it is complied with.

- 8. Lockers will be furnished by the dock for the storage of tools and the mixing of paints and the keeping of same while vessels are in dock or at the wharves. But no kerosene, turpentine, naphtha, gasoline or other inflammable materials in quantity of more than five gallons will be allowed to remain in lockers or on the dock or wharves overnight. A duplicate key to each locker so in use will be given to an officer of the vessel or other person authorized to act for same.
- 9. All staging and other gear of all kinds shall be put away and secured where ordered, before the vessels are floated.
- 10. Any vessel desiring to work in the night time must give notice in writing before 3 p. m. of the day preceding the night during which it is desired to work.

#### WOOD SHIP RECORD

Wood shipyards in Oregon district showing number of ways, contracts, vessels launched and delivered for government, private account, and French interests:

YARD	Ways	Contracts	Launched	Delivered
Coast Shipbuilding Company	4	12	3	4
Columbia Engineering Works	4	11	9	6
Feeney & Bremer	1	1	::	::
Grant Smith-Porter	8	34	26	19
G. M. Standifer Construction Corporation	10	26	14	5
George F. Rodgers Company	4	6	2	• :
Kiernan & Kern	2	5	1	1 .
Foundation Company	10	20	20	20
McEachern Shipbuilding Company	6	20	16	10
Peninsula Shipbuilding Company	4	12	10	5
Sommarstrom Shipbuilding Company	4	8	5	• •
St. Helens Shipbuilding Company	3	14	10	9
Supple-Ballin Corporation	4	12	10	7
Wilson Shipbuilding Company	4	10	5	! 2

### STEEL SHIP RECORD

Steel shipyards in Portland District with building berths at each, total contracts, hulls floated and those delivered in 1917-18 are:

PLANT	Ways	Contracts	Launched	Delivered
Northwest Steel Company	4	42 33 19	21 13 10	18 11 9
G. M. Standifer Construction Corporation, Vancouver, Can. Totals	$\frac{5}{18}$	15 100	$\frac{1}{45}$	38

Steel shipyards of the Portland territory have launched 345,700 tons in less than two years.



11. Vessels desiring to lie at the wharves of the dock to complete repairs, or for any other purpose, may be permitted to do so if the wharves are not ing to the superintendent and paying the proper charge.

12. Vessels lying at the relationship to the proper charge.

Vessels lying at the wharves or in the dock are strictly prohibited from dumping ashes or rubbish of any kind on or about the same.

13. Electric wires must not be interfered with under

any circumstances.

14. Keel blocks, bilge blocks or shores must be moved and replaced only under the supervision of the superintendent or his representatives and at the expense of the contractor. However, contractors for cleaning and painting will always be required to shift, and to clean and paint the vessel under all bilge blocks and shores unless forbidden in writing by the master.

15. Any damage to the dock or wharves, or property connected therewith, caused by negligence or any other fault of the vessel, will be charged to the vessel.

16. Any person employed on or about any vessel who shall fail or neglect to observe these rules or the orders of the superintendent, or shall use profane or indecent language, or otherwise render himself obnoxious, shall be immediately discharged and shall not again be allowed upon such vessel while in the dock or at the wharves of the Port of Portland.

17. Vessels docked with ballast logs alongside are taken at the vessel's risk. The Port of Portland assumes no responsibility in such cases for damage to

dock, ship or cargo.

18. Scows shall vacate the dock upon order of the superintendent whenever the dock is required for other work, said scow to be re-docked without expense to owner except for lay days as provided by tariff covering

19. When it is found necessary to raise a vessel again, after beginning to sink the dock, she will be charged lay day rates plus all additional expense caused the dock therefore; provided, however, if the vessel is floated and it is necessary to inspect the keel and bilge blocks before she can be raised again, the charge will be 75% of regular docking rates (minimum \$50) and all additional expenses.

20. These rules and regulations are subject to change

at the pleasure of the Port of Portland.

#### Public Dock Commission

The Commission of Public Docks has available for new shipping facilities, with work being constructed now, \$8,000,000. Construction is now under way for a first unit grain elevator of 1,000,000 bushels capacity and a pier 1,200 feet long with transit shed 1,200 feet in length and 180 feet in width. A second pier will also soon be constructed for handling, storing and shipping of lumber, structural steel and other bulk freight. Modern mechanical freight handling equipment will be installed on these piers. It is expected to have these waterfront facilities completed this year. This elevator and freight terminal is located about five miles below the center of the city and is below all bridges. The improvements outlined above and under construction will cost about \$2,500,000. This terminal is to be known as the St. Johns Municipal Terminal.

### Harbor Protection

The harbor of Portland is under the protection of an able and efficient day and night police patrol, acting under the direction of the harbor master. fire boats are always at an instant's call and minor fire-fighting equipment and life-saving devices, including pulmctor, are carried by the police launch. In all cases of necessity call Marshall 3084 or A 4010.

#### Portland Wharves and Warehouses Commercial Wharves

(Note: These wharves are listed in their order from north to south.) West Side Willamette River 15th St. Terminal: Between foot of 15th and 18th Sts., owned and operated by City of Portland.

(a) Municipal Dock No. 1, 955 feet in length by 120 feet in width, 300 feet of which has two levels. This dock is covered with a transit shed 935 feet in length and 100 feet in width; double track in rear the full length of the dock.

(b) At the north end of the dock a slip 484 feet in depth by 120 feet in width, with an open dock along its south line the full length of the slip and

60 feet wide. Double track along face of open dock.
(c) Warehouse "A" in rear of dock at the south end, a one-story structure 190 feet by 200 feet. Between the dock and the warehouse is an electric conveyor for transfer of freight between the two structures capable of handling grain in sacks, flour, canned goods,

d) Warehouse is served by tracks on two sides.

(d) Warehouse "B" along the south side of the open dock, a one-story transit shed 330 feet in length by 176 feet in width. Double tracks in rear of the ware-

house.

The combined rail trackage facilities for the above terminal will accommodate 59 fifty-foot cars at one time.

At the open dock along the slip there is installed locomotive crane of a maximum lifting capacity of 20 tons.

For use on the quay dock and warehouse "B" there are provided four portable electric dock winches, each of a rated capacity of 31 horsepower; and for general use on the dock and warehouse two two-ton electric dock trucks. This dock is fitted with automatic sprinkler system and fire walls.

Dock No. 1 and Warehouse "B" are equipped with a system of cargo masts by which ships gear can be supplemented to expedite the handling of cargo.

North Bank Dock: Foot of 12th St., cwned and operated by Spokane, Portland & Seattle Railroad Co., 1,000 feet long by 193 feet deep. Has covered transit shed 900 feet long by 169 feet wide. Two-level dock throughout. Goods handled to second floor by an electric elevator conveyor. Adjoins trackage of all railroad. roads. Twelve tracks in rear of dock, Handles principally grain.

Crown Mills Dock: Foot of 9th St., owned and operated by Crown Mills Co. 300 feet long by 140 feet deep. Used for manufacturing, storing and shipping flour and grain. Rail facilities.

Mersey Dock: Foot of 8th St. Owned and operated by Balfour, Guthrie & Company, 300 feet long by 230 feet deep. Used for general merchandise and grain. Rail facilities.

Columbia Dock No. 1: Foot of Northrup St. Owned by Lewis Investment Co. Operated by Kerr, Gifford & Co. 300 feet long by 230 feet deep. Two-level dock. Transit shed 300 by 220 feet trackage entire length of dock. Handles grain only.

Albers Bros. Dock Nos. 1, 2 and 3: Foot of Northrup, Marshall and Broadway Sts., 727 feet river dock frontage. Owned and operated by Albers Bros. Milling Co. Grain and general cargo. Rail facilities.

Ainsworth Dock: Foot of 3rd to 5th Sts. Owned by Union-Pacific Railroad Co. Operated by Oregon-Washington R. R. & N. Co. Total length 890 feet of which 298 feet is single level covered, 81 feet wide. Remainder is two-level covered, 96 feet wide. Used for general cargo. Rail facilities.

Southern Pacific Dock: Foot of Davis St. Owned by Portland Wharf Co. Operated by Allen & Lewis and Shaver Transportation Co. 200 feet long by 80 feet deep. Two-level dock covered. Used by river steamers and coasters. Rail facilities.

Couch Street Dock: Foot of Couch St. Owned by Portland Wharf Co. Operated by Parr, McCormick S. S. Co. 260 feet long by 140 feet deep. Two-level dock, covered. Trackage connection on Front St. General cargo.

Ukase Investment Co. Dock: Foot of Market St. Owned and operated by Ukase Investment Co. 300 feet long by 100 feet deep. Single-level open dock. Used for lumber and open storage,



Municipal Dock No. 3, Pittsburgh St. Terminal: East Side Willamette River, between foot of Pittsburgh and Alta St. A quay dock 540 feet long by 122 feet in width, 100 feet of which is two-level. This dock is covered with a transit shed 440 feet in length by 100 feet in width. It has rail connection and special freight handling devices.

Portland Flouring Mills Dock: Opposite North Pacific Lumber Co. Mills. Owned and operated by Portland Flouring Mills Co. 560 feet long by 90 feet

deep. Used for flour and grain only. Rail facilities.
Oregon-Washington Dock: Opposite North Pacific
Lumber Co. mills. Owned and operated by Union
Pacific Ry. Co. 560 feet long by 120 feet deep. Singlelevel covered dock. Used for general cargo and grain. Rail facilities.

Pacific Coast Elevator Co. Dock: Opposite Eastern & Western Lumber Co. Dock. Owned and operated by Pacific Coast Elevator Co. 560 feet long by 102 feet deep. Single-level covered dock. Ballast dock adjoining 102 feet long by 90 feet deep. Used for grain exclusively. Rail facilities.

Albina Dock: Opposite Eastern & Western Lumber o, Dock owned by Oregon-Washington R. R. & N. Co. Dock owned by Oregon-Washington K. K. & D. Co. 560 feet long by 120 feet deep. Single-level covered

dock. Used for grain exclusively. Rail facilities.

Montgomery Dock No. 2: Foot of Russel St.

Owned by Montgomery Estate. 550 feet long by 270 feet deep. Single-level covered dock. Used for grain exclusively. Has complete modern equipment for graining, smutting, rolling and crushing of grain, manufacture of chop feed and modern oat groat plant. Rail

Irving Dock: Foot of Goldsmith St. 400 feet long v 140 feet deep. Single-level dock. Used for grain by 140 feet deep. Single-level dock. exclusively. Rail facilities.

Globe Grain & Milling Co. Dock: Foot of Holladay Ave. Owned and operated by Globe Grain & Milling Co. 300 feet long by 140 feet deep. Two-level covered dock. Used for grain exclusively. Rail facilities.

Southern Pacific Dock: Foot of Irving St. Owned and operated by Southern Pacific Co. 648 feet long by 42 feet deep. Single-level covered dock. Used for general cargo and storage. Rail facilities.

Southern Pacific Dock: Foot of E. Davis St. Owned and operated by Southern Pacific Co. 1,200 feet long by 26 feet deep. Single-level open dock. Used for general cargo to and from cars.

East Side Willamette River Municipal Dock No. 2, East Washington St. Terminal: Between foot of East Washington and E. Oak Sts. Owned and operated by City of Portland. A two-level quay dock, 526 feet long by 122 feet in width. The dock is covered with a transit shed 526 feet in length by 400 feet in width. Double track in rear the full length of dock.

Both docks, No. 1 and No. 2, have cargo masts or cargo hoists, which are used either in connection with the ship's gear or in combination of the ship's gear and winches and for handling freight between the upper and lower levels of the docks. Electric elevators are installed.

This dock is fitted with automatic sprinkler system and fire walls.

Spokane, Portland & Seattle Ry. Dock: Foot of East Madison St. Owned and operated by Spokane, Portland and Seattle Ry. Co. 200 feet long by 80 feet wide. Single-level open dock. Used for lumber and open storage.

In addition to the above waterfront facilities, the City of Portland recently purchased a tract of 155 acres near the North boundary of the City on the East Side of the Willamette River. It is proposed to develop the 75 acres adjoining the waterfront by constructing a system of piers, slips and grain elevators and it is the policy of the City to lease the 80 acres in rear of the proposed waterfront development to industries which would be interested in being located adjoining deep water transportation facilities. The first units of this development consisting of the 1200 ft, pier and

1.000.000 bushel grain elevator will be in operation this

#### Private Commercial Wharves

(Note: This list of wharves comprises those belonging to industries located among the commercial wharves of the port and which are made use of by steamers in loading cargoes direct from the industries. They are listed in their order from north to south.)

#### West Side Willamette River

Clark-Wilson Lumber Company Dock: Linnton. Owned and operated by Clark-Wilson Lumber Co. 600 feet long by 125 feet deep. Open dock. Used by owners only for storing and handling lumber and in loading vessels from their own lumber yards. Rail facilities.

North Pacific Lumber Co. Dock: One-quarter of a mile north of Nicolai St. Owned and operated by North Pacific Lumber Co. 640 feet long by 100 feet deep. Open dock. Used by owners only for storing and handling lumber and in loading vessels from their

own lumber yards. Rail facilities.

Eastern & Western Lumber Co. Dock: Nicolai St. Owned and opérated by Eastern & Western Lumber Co. 640 feet long by 160 feet deep. Open dock. Used by owners only for storing and handling lumber and in loading vessels from their own lumber yards. Rail facilities

American Can Company Dock: Foot of 14th street. Owned and operated by American Can Co. 300 feet long by 60 feet deep. Open dock. Rail facilities.

West Side Lumber & Shingle Co. Dock: Foot of Montgomery St. Owned and operated by West Side Lumber and Shingle Co. 190 feet long by 85 feet deep. Single-level open dock. Used for lumber only. Rail facilities facilities.

Portland Lumber Co. Dock: Foot of Lincoln St. Owned and operated by Portland Lumber Co. 450 feet long by 150 feet deep. Single-level open dock. Used for lumber only. Rail facilities.

Northwest Steel Co. Dock: Foot of Sheridan St.

Owned and operated by Northwest Steel Co. 450 feet long by 150 feet deep. Single-level open dock. Used by owners in handling of steel products. Rail facilities.

## East Side Willamette River

St. Johns Lumber Co. Dock: Foot of Burlington St. Owned and operated by St. Johns Lumber Co. 550 feet long by 240 feet deep. Single-level open dock. Used for lumber only. Rail facilities.

Peninsula Lumber Co. Dock: Foot McKenna Ave. 1,000 feet long by 120 feet wide. Owned and operated by Peninsula Lumber Co. Single-level open dock. Used for lumber only. Pail facilities.

by Peninsula Lumber Co. Single Used for lumber only. Rail facilities.

Inman-Poulsen Lumber Co. Dock: South of foot of E. Lincoln St. Owned and operated by Inman Poulsen Lumber Co. 450 feet long by 150 feet deep. Single-level open dock. Used for lumber only. Rail facilities.

### Portland Municipal Docks

The following rules and regulations pertaining to operation of municipal docks and wharves shall apply:

No vessel shall berth at any municipal dock or wharf until an application shall have been made at the office of the Commission or the wharfinger and permit for berth granted.

The owner, agent, manager, master, or person in command of any vessel, must deliver, as soon as possible after his arrival at any municipal dock or wharf, to the wharfinger a full and correct statement of all the mer-chandise and cargo of every kind intended to be dis-charged from such vessel at said wharf, specifying the character, quantity and mark of each kind of such merchandise or cargo.

The owner, agent, manager, consignee, master or person in command of any vessel must, and if possible before her departure from any municipal dock or wharf,

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deliver to the wharfinger a full and correct statement of all the merchandise and cargo of every kind received on such vessel at such dock or wharf, specifying the character, quantity and marks of each kind of such

merchandise or cargo.

The City of Portland is not an insurer of goods or merchandise in transit upon a municipal dock or wharf nor does the City of Portland assume any greater responsibility in regard thereto than is imposed by law.

No gun powder or other explosive shall be discharged on or loaded from any municipal dock or wharf or vessel, except by permission of the Commission and must be immediately removed.

Merchandise deemed extra hazardous material in the or such material as hay, excelsior or broom corn, must in all cases be removed from the wharf within 24 hours, unless extension of time is specifically granted by the Commission.

Vessels will be allowed to take on board gasoline or distillate from a municipal dock or wharf by daylight only. Delivery must be made from wagon to vessel direct. If the vessel is not ready to receive same, the loaded wagon will not be allowed to remain on wharf, but must immediately pull off of same.

Emptly gasoline or distillate drums must be removed

from the wharf at once.

### Tariff No. 4 of the Commission of Public Docks Portland, Oregon.

Effective December 15, 1918. Municipal Dock No. 1 foot of 15th Street. Municipal Dock No. 2, foot of E. Washington St. Municipal Dock No. 3, foot of Pittsburgh St. Municipal Warehouses: Warehouse "A" foot of 15th St.; Warehouse "B" foot of 17th St. St. Johns Municipal Terminal, St. Johns. Office of the Commission: Municipal Boat Landing, foot of Stark

### Dockage

The following charges for each 24 hours or fraction thereof will apply for dockage of vessels not receiving or discharging cargo:

Under 50 feet in length	. \$0.01	per foot
51 to 100 feet in length		
101 to 150 feet in length	011/2	per foot
151 to 175 feet in length	01:34	per foot
Over 175 feet in length	02	per foot
Funestions		•

On vessels undergoing repairs or outfitting the following charges will apply:

(a) Dockage, rates herein specified.

(b) Free wharfage on supplies and materials used in repairs, provided same are removed from dock within 48 hours.

(c) Regular rates as specified for upper docks on all supplies and materials remaining on dock more than

48 hours.

One-half of dockage rates will apply on vessels berthing to receive drinking water, if berth is vacated promptly upon receipt of supply of water; otherwise be made to publicly operated vessels berthing to re-ceive drinking water if berth is vacated promptly upon receipt of supply of water.

The Commission reserves the right to refuse berth

whenever in its opinion it is necessary.

### Miscellaneous Charges

The charge for unloading or loading cars, or for other dock labor performed, unless otherwise specified,

will be actual cost plus ten (10) per cent.

The charge for weighing on public truck scales at Municipal Dock No. 1 will be at twenty-five (25) cents, which charge will include the weighing of vehicle both loaded and light.

The charge for supplying drinking water to vessels at Municipal Docks Numbers 1 and 2 of the City of Portland will be \$1.00 for five thousand gallons or less,

and for amounts over five thousand gallons, twenty cents for one thousand gallons. Use of city hose at the risk of the users will be permitted without charge. Vessels berthing to take water will pay in addition one-half dockage rates.

Dock equipment at risk of users will be furnished by the City at its convenience at the following rates per hour or fraction thereof.

nout of maction (mercor.	
Cargo boxes\$0.05	each
Conveyor	) .
Dock autos with driver	each
Electric piling machine	5
Electric winches with cable 1.25	each
Electric winches without cable 1.00	each
Hand power derrick	)
Locomotive crane with operator:	
Equipped with single block	)
Equipped with double block	)
(minimum charge \$5.00)	
Rotary converter 1.2	5
Salmon slings	
Wire hoisting cables	

Charges and rates above named are subject to amendment, alteration or cancellation without notice at any time by the Commission of Public Docks.

### Foreign Consuls

Austrian-Hungarian—(Swedish Vice Consul acting). Belgian—C. Henri Labbe, Vice Consul, 201 Labbe Building.

British-H. L. Sherwood, Consul, Albert E. Browne,

Vice Consul, 6 Ainsworth Bldg.

Chilean—(Mexican Consul acting).
Chinese—Seid G. Back, Consul, 233 Second St.
Costa Rican—(Vacant).

Danish-Henry Harkson, Vice Consul, 413 Chamber of Commerce Bldg.

Dutch—A. H. Metzelaar, Vice Consul, 1124 Board of Trade Bldg. French—C. Henri Labbe, Consular agent, 201 Labbe

Building.

German—(Swiss Consul acting).

Honduran (Vacant).

Italian-Albert B. Ferrera, Consular agent, 403 Stock Ex. Bldg.

Japanese—T. Sigemura, Consul, 210 Henry Bldg. Mexican—A. R. Vejar, Consul, 409 Alisky Bldg. Nicaraguan—(Vacant).

Norwegian-A. O. Bjelland, Vice Consul 614-16

Henry Bldg. Peruvian-M. D. Derteano, Consul, 400 Blake McFall

Building.

Russian—(Vacant). Spanish—A. R. Vejar, Vice Consul, 409 Alisky Bldg. Swedish—Valdemar Lidell, Vice Consul, 455 Pittock

Swiss-Albrecht Streiff, Consul, 816 Spalding Bldg.

#### Pilots-Columbia River

Office river pilots, 517 Oregon Bldg., Phones Bdwy. 1542, A 4568.

Astoria office bar and river pilots, 490 Bond St., Phone

(day) 169, (night) 846.

Bar pilots—C. S. Gunderson, H. O. Hansen, R. Swanson, M. D. Staples, E. D. Parsons, H. F. Astrub, August Lofstedt, J. C. Reed, M. Noland.

Biver Pilots Alving Aller C. J. Anderson, J. J. Anderson

River Pilots—Julius Allyn, C. J. Anderson, J. J. Anderson, Geo McNelly, M. Moran, A. R. Pearson, A. L. Pease, Edward Sullivan, J. L. Smith, R. Sandstrom, W. W. Babbidge.

#### Custom House

On block bounded by N. Broadway, Everett, N. 8th and Davis Sts.

Open daily, except Sundays and holidays, from 9:00 a. m. until 4:30 p. m. (June 15 to Sept. 15, close Saturdays 1 p. m.) Duties must be paid before 3 p. m., Saturdays before 12 noon.

#### Foreign Trade.

Entering:
Survey (100 tons or over, dutiable cargo)\$3,00
Survey (under 100 tons, dutiable cargo) 1.50
Survey (if in ballast or non-dutiable cargo)
Entry (100 tons or over)
Entry (under 100 tons) 1.50
Certificate of payment of Ton Tax (For Ves) 20
Permit to take on ballast, cargo or fuel while un-
loading, or to take on fuel before entry20
Permit to lade after sunset
Bond to lade or unlade after sunset
Post entry to manifest 2.00
Clearing:
Clearance (100 tons or over)\$2.50
Clearance (under 100 tons)
Certificate Shipping Articles (Am. Vessels)20
Permit to retain on board cargo destined for for-
eign port
Bond to deliver at foreign port dutiable cargo re-
tained on bcard
(No bond required on free goods)
Coastwise Trade

Entering or clearing foreign vessels\$2	.00
Bond on vessel granted permission to proceed to a	
place in Alaska or Hawaii, that is not a port	
of entry	.40

#### Steamer Routings

For Europe:

East Asiatic Co. Ltd. (Meyer, Wilson & Co.): Sherlock Building. Danish steamers. No regular pier. Sailings for European ports, via Panama Canal, calling at all North Coast ports westbound, monthly. Freight,

Sailings indefinitely postponed.

Royal Mail Steam Packet Co. (Frank Waterhouse & Co.); Lewis Building, British steamers. No regular pier. Sailings for London, Liverpool and Glasgow, via North Pacific ports, monthly. Freight. Sailing indefinitely postponed.

Johnson Line (W. R. Grace & Co.): Refer to San Francisco or Seattle office. Swedish motor vessels. No regular pier. Sailings for Scandinavian ports, via Central American ports, monthly. Freight. Sailings

indefinitely postponed. Harrison Direct Line (Balfour, Guthrie & Co.): Park and Oak Sts. British steamers. Pier-Mersey Dock. Sailings for London and Liverpool, westbound, via Pa-

The San Francisco & Portland Steamship Co.: Freight and passengers. Sailings from Ainsworth Dock every sixth day for San Francisco and Los Angeles.

every sixth day for San Francisco and Los Angeles.
Pacific Steamship Co. East Washington Street Terminal: American steamer. Pier. Sailings for Astoria,
Coos Bay and California ports. Freight, passengers.
Numerous vessels are engaging in the lumber and
freight business between Portland and Oregon and Cal-

ifornia ports, carrying passengers, and making almost daily sailings.

For further information see San Francisco.

#### For South America

For South American sailings, see routings from San Francisco and Puget Sound.

### For Atlantic Coast

American-Hawaiian S. S. Co. (The Panama Canal

American-Hawaiian S. S. Co. (The Panama Canal Line): Railway Exchange Building. American steamers. Sailings for New York, Boston, Charleston and Norfolk, via Puget Sound, San Francisco, San Pedro, San Diego and Panama Canal every five days. Freight. Atlantic & Pacific S. S. Co. (W. R. Grace & Co.): Railway Exchange Building. American steamers. No regular pier. Sailings for New York and Atlantic ports via San Francisco and Puget Sound, every 18 days. Freight. (Sailings indefinitely postponed.)

Tramp steamers make Portland regular port of call

Tramp steamers make Portland regular port of call for points in Europe, South America, Orient, Australia

and Insular possessions, loading lumber, grain, flour, fruits and other products produced and manufactured in the State of Oregon.

Chas. R. Nelson operates vessels from Portland to the Orient and Australia.

Sudden & Christensen.

#### Coal Bunkers

West Coast Coal and Dock Co.: Between East Glisan and Irving. Storage capacity 10,000 tons, 650 feet berthing space. Machinery being installed on dock of the most modern equipment to facilitate speedy loading. Equipment to load by barge while steamer is taking

cargo also provided.
Pacific Coast Coal Co.: Foot of Front and Raleigh
Sts. Storing capacity 12,000 tons. 300 feet berthing
space. Loading at rate of 200 tons per hour by electric

conveyor.

#### Oil Docks

Associated Oil Co.: Linnton. 400 feet berthing space. Depth of dock 36 feet. Total area 14,200 sq. feet. Normal depth of water 29 feet. Storage and tankage capacity of 160,000 barrels crude oil and 10,260 barrels refined oil.

Standard Oil Co.: Linnton. 400 feet berthing space. Depth of dock 50 feet. Total area 20,000 square feet. 28 feet of water at zero. Storage and tankage capacity of 64,913 barrels crude oil and 75,999 barrels refined oil. Union Oil Co.: Linnton. 400 feet berthing space. Depth of dock 40 feet. Total area 15,800 square feet. 29 feet of water at zero. Storage and tankage capacity of 8,800 barrels crude oil and 20,000 barrels refined oil. The semanary maintains larger reserves supply of cile in The company maintains larger reserve supply of cils in the storage tanks at Willbridge, 1¼ miles from dock, with pipe line connections, and can supply any desired amount of either crude or refined oil upon request.

Shell Co.: Gasco. 400 feet berthing space. Storage and tankage capacity of 110,000 barrels of fuel oil and 45,000 barrels of light oil. 28 feet of water at zero.

### U. S. Bonded General Storage Warehouses

Oregon Transfer Co. 474 Glisan St.

#### U. S. Bonded Draymen

Barclay & Barclay, care Wadhams & Co., 4th and Oak Sts.; Driscoll & Collier Transfer Co., 27 Second St.; Gray, Thomas, 31 Second St.; Green Transfer Co., 125 Front St.; Haack, H. C., Transfer Co., 268 Front St.; Helser Bros. Transfer Co., 104 N. 5th St.; Holman Transfer Co., 8 Front St.; Morse, Clay S., 308 Everett St.; Meier & Frank Co., 5th and Everett Sts.; Mosher, George W., 402½ Eugene St.; Northwestern Transfer Co., 64 Front St.; Oregon Auto Dispatch, 13 First St.; Oregon Transfer Co., 474 Glisan St.; Pacific Transfer & Storage Co., 33 Second St.; Western Transfer Co., care Lang & Co., 1 First St.

### Customs Brokers

Bush, Geo. S. & Co., Inc., 409 Concord Building.

#### Government Officials

W. A. Moore, Collector of Customs; L. A. Pike, Chief Deputy Collector of Customs; R. P. Bonham, Immi-gration Inspector; G. M. Magruder, Health Officer.

#### Commission of Public Docks

Chas. B. Moores, Ben Selling, John H. Burgard, F. C. Knapp, A. H. Averill, G. B. Hegardt, engineer and secretary, F. I. Randall, assistant secretary, Capt. J. Speier, harbor master. Office foot of Stark St.

### Port of Portland Commission

R. D. Inman, President; J. W. Shaver, Vice-President; A. L. Pease, Secretary; D. C. O'Reilly, Treasurer; E. W. Spencer, W. H. Patterson, Robert H. Strong; J. P. Doyle, Assistant Secretary and General Superintendent.

### Importers and Exporters

O. E. Fletcher; T. M. Stevens & Co.; Closset & De-O. E. Fletcher; T. M. Stevens & Co.; Closset & Devers; Dwight-Edwards Co.; Tailor-Young Co.; Portland Flouring Mills Co.; A. Rupert & Co.; M. Seller & Co.; Fleischner, Mayer & Co.; J. A. Pattison Lbr. Co.; Portland Rice Milling Co.; Blumauer-Frank Drug Co.; Portland Cordage Co.; Kerr-Gifford & Co.; Pacific Grain Co.; Portland Woolen Mills Co.; Wittenberg-King Co.; Kaola Company; McNeff Bros.; Frank Henius & Co.; Geo. Wills & Sons; Occidental Trading Co.; Trans-Pacific Corporation: A. O. Anderson & Co. Trans-Pacific Corporation: A. O. Anderson & Co.; Balfour, Guthrie & Co.; Pacific Export Lumber Co.; Dant & Russell; S. Ban & Co.: Mitsui & Co.; Albers Bros.; M. Furuya Co.; W. J. Young Asiatic Importing Co.; Statter & Johnstone; Lange, Kenyon & Co.; Harry E. Lewis: Norwegian Importing Cc.; Allen & Lewis; Lang & Co.; Mason, Ehrman & Co.; Wadhams & Co.; Northern Grain & Warehouse Co.; Wilcox-Hayes & Co.

### U. S. Government Offices in Portland

Alaskan Engineering Commission, Custom House, Broadway 344; American Red Cross, Corbett Building, Main 4204; U. S. Appraisers Office, Geo. Welter, Appraiser, 101 Custom House, Broadway 344; U. S. Attorney, District of Oregon, Bert E. Haney, P. O. Bldg., praiser, 101 Custom House, Broadway 344; U. S. Attorney, District of Oregon, Bert E. Haney, P. O. Bldg, Main 2036; Collector of Customs, Custom House, Broadway 344; Department of Agriculture, Grain Standardization, Worcester Building, Main 954; District Court, Federal Building, Marshall 744; Engineers, Division Engineers, Custom House, Broadway 344, Engineer's Office, Custom House, Broadway 344; Engineers' Office, Couch Building, Marshall 1033; Employment Office, Third and Oak, Broadway 3555; Examining Board of Surgeons for Pensions, 410 Medical Building, Main 812; Farm Help Specialist, J. W. Brewer, 602 Oregon Bldg., Broadway 440; Federal Reserve Bank, Stark and Fifth Streets, Broadway 948; Food and Drug Inspector, J. J. Morton, 105 Custom House, Broadway 344; Foreign & Domestic Commerce, 610 Oregon Bldg., Broadway 440; Forest Service, 408 Beck Building, Main 2798; Hydrographic Office, 403 Custom House, Broadway 1363; Immigration Service, 424 Railway Exchange Building, Main 924; Inspector of Steam Vessels, Custom House, Broadway 344; Internal Revenue Agent, Custom House, Broadway 344; Internal Vessels, Custom House, Broadway 344; Internal Revenue Agent, Custom House, Broadway 344; Internal Revenue Bonded Warehouse, 13th and Hoyt Sts.; Internal Revenue and Income Tax Office, Custom House, Broadway 344; Land Office, Worcester Building, Main 7524; Lighthouse Inspector, Custom House, Broadway 344; Marine Corps, Recruiting Station, 306 Panama Building, Marshall 3548; U. S. Marshal, Federal Building, Main 25; Naturalization Examiner, 104 Custom House, Broadway 344; Naval Radio Station, 7208 F. House, Broadway 344; Naval Radio Station, 7208 E. 92nd S. E. Tabor 1727; Navy Recruiting Station, 206 Dekum Building, Marshall 3386; Public Health and Marine Hospital Service, Medical Building, Main 1296; Quartermaster's Office, Worcester Block, Main 7301; Reclamation Service, 417 Fenton Building, Broadway 1144; Secret Service, Post Office Building, Main 8061; Superintendent Construction of Public Buildings, Custom House Broadway 344; Surveyor General Custom Superintendent Construction of Public Buildings, Custom House, Broadway 344; Surveyor General, Custom House, Broadway 344; Weather Bureau, Custom House, Broadway 344; Special Agents, Custom House, Broadway 344; Special Agents, Department of Justice, Federal Building, Main 2812.

#### Lumber Exporters

The leading lumber exporters are as follows: Dant & Russell; American Export Lumber Co.; Duncan Lumber Co.; Pacific Export Lumber Co.; Clark & Wilson Lumber Co.; Inman-Poulsen Lumber Co.; Eastern & Western Lumber Co.; Portland Lumber Co.; St. Johns Lumber Co.; Chas. R. McCormick Lumber Co.; Westport Lumber Co.; Hammond Lumber Company.

Among those that import only are: Emerson Hardwood Company; Allen & Lewis; Wadhams & Company; Wadhams & Kerr Bros.; Mason, Ehrman & Co.; Lang & Company; Closset & Devers; Dwight-Edwards Company: M. Seller & Company; Lowengart & Company; Meier & Frank Company; Harry E. Lewis.

### Port Warden

A. W. McIntosh, Port Warden, appointed by the governor. His duties are to board vessels when requested and open the hatches and inspect cargoes to determine cause of any damage. He is paid by the persons requesting his services.

#### Railroade

Southern Pacific, Union Pacific, Great Northern, Northern Pacific, Chicago, Burlington & Quincy Rail road, Oregon-Washington Railroad & Navigation Company, and Spokane, Portland & Seattle Ry. Co. maintain extensive terminals.

spokane, Portland & Seattle, Ry Co.; Oregon Electric Railway Co.; Oregon Trunk Ry. Co.; United Railways Co.; Weidler Dock. W. C. Wilkes, assistant general freight and passenger agent; R. H. Crozier, assistant general passenger agent. This dock is located at the foot of 12th and Thurman Sts. It has a double deck warehouse. The insurance charge is \$1.40 per thousand. Trackage facilities to the extent of seven tracks are provided, switching to which is done by the Spokane, Portland & Seattle Ry. Co. Delivery from and to other lines operating from Portland is made by switching through that company.

#### Steel Shipbuilders

Northwest Steel Co., Foot of Sheridan St.; Willamette Iron & Steel Works, 462 North Front; Albina Engine & Machine Works, Foot of Albina; Columbia River Shipbuilding Corporation, 412 Front Street; Guy M. Standifer Const. Co., No. Portland.

#### Wood Shipbuilders

Guy M. Standifer Const. Co., No. Portland; Columbia Engineering Works, Linnton; Peninsula Shipbuilding Co., Ft. McKenna Ave.; Kiernan & Kerns Shipbuilding Co., Ft. Market St.; Coast Shipbuilding Co., South Portland; Supple & Ballin Shipbuilding Corp., Ft. East Oak Street; Grant, Smith, Porter Company, St. Johns; Foundation Company, North Portland.

## Marine Repair Workers

Albina Engine & Machine Works; Pacific Marine Iron Works; Willamette Iron and Steel Company; Marine Repair and Construction Company; Portland Shipbuilding Company.

### Marine Hardware Dealers

The Beebe Company, 182 Morrison: Dan E. Erickson, 93 First St.; Marine Intelligence, Roy Crandall, 203 Morrison St.; Merchants Exchange Association, Board of Trade Building.

Ship Chandlery

The Beebe Company, 182 Morrison; F. C. Hagemann The Reebe Company, 182 Morrison; F. C. Hagemann, 182 Morrison; F. C. Hagemann, 183 First St.; Material Chasers, Railway Exchange Bldg.; Northwest Plug Co., 554 E. 10th St.; Oregon Marine & Fisheries Supply Co., 107 First St.; Portland Marine Supply Co., 229 Ankeny; Portland Shipbuilding Co. Foot of Nebraska; U. S. Supply Co., Northwestern Bank Bldg.; Viking Marine Paint Co., Inc., 487 N. 29th St.; Western Ship Supply Co., 1439 Moody St.

# PRINCE RUPERT **British Columbia**

Population: About 5.000.

Position: Longitude 130 degrees 21 minutes west, latitude 54 degrees 18 minutes north.

Vancouver, south 583 miles; Seattle, south Distances: 705 miles

Depth of harbor: Average 26 fathoms.

Harbor Master: Cap. E. McCoskrie.

Harbor: Broad open harbor, about 16 miles in length,

with average width of 1½ miles.
Customs Representative: J. H. McLeod, collector.
Customs Brokers: G. W. Nickerson Co., Douglas Sutherland.

Bonded Warehouses: Five. Cold storage capacity, 14,000,000 pounds.

Docks, Piers and Wharves: Grand Trunk Pacific wharf, 1,625 feet in length. Capacity unlimited. Tie dock, 120 feet in length. Opal dock, 375 feet in length. All with storage warehouses. Provincial government wharf, 600 Cold storage wharf. Ore bunkers and several smaller private wharves.

Stevedoring: Pacific Stevedoring & Contracting Co., P.

G. Grooes, manager.
Wireless and telegraph stations owned by the Dominion Government

Banks: Bank of Montreal, Bank of Commerce, Royal Bank of Canada, Union Bank of Canada.

Temperature. Highest in 1918, 81° (July); lowest, 11°

(March).

Newspapers: Two dailies.
Drydocks and Marine Railways: Grand Trunk Pacific dry dock, 600 feet long, 30 feet depth. Capacity, 20,000 tons. Sectional drydock capable of handling three vessels at one time. Largest unit will handle ship 270 feet; two smaller units ships of 165 feet. Facilities for all classes of shipbuilding and repair work. Charges not fixed. Rupert Marine Iron Works, marine ways capable of handling local work. Two others for fishing boats.

Towboat Companies: Prince Rupert Towing Co., Capt.

H. B. Babington and North Coast Towing Co., Capt.
Oil Docks: Imperial Oil Co., five-tank wharf, pumping station and complete facilities. Five million gallons fuel oil.

List of Charges: Mooring, none. Wharfage, 50 cents per ton on general cargo. Towing average \$35 per day. Water, 20 cents per 100 cubic feet up to 5,000 cubic feet, then 1 cent reduction for each 5,000 cubic feet over that amount. Stevedoring, rates not fixed, account wharfage facilities new; about same as other British Columbia ports. Cartage, 50 cents to 75 cents per ten, general merchandise. Storage, no fixed rates. Ice, \$3 a ton.
Railroad Connection: Grand Trunk Pacific transcontinental line, Prince Rupert to Halifax, N. S.

Industries: Seven cold storage plants, saw mills, capacity 150,000 daily, and shingle mills. Two small boatbuilding concerns. Headquarters for large fishing industry—halibut, salmon, herring, cod and crabs. 1918 catch: Halibut, 15,206,700 pounds; salmon, 86,934,500 pounds; cod, 2,218,900 pounds; herring, 2,3°0,400 pounds; flat fish, 1,589,000 pounds.

Government Officials J. H. McMullin, government agent; Dr. N. H. McNeil, immigration officer; Capt. Saun-

ders, agent marine department; J. C. Williams, fisheries in-spector; United States Consul, E. A. Wakefield. Steamship Companies: Grand Trunk Pacific S. S. Co., Canadian Pacific S. S. Co., Union Steamship Company of B. C., Ltd., Pacific S. S. Co.

# PRINCESS ROYAL HARBOR Western Australia

Pilotage: Inwards or outwards, including navigation of Sound, £2 for under 8 feet to £66s, for 21 feet and over, increasing 5/ per foot up to 19 feet; 19 feet to 20 feet £5 12s; 20 feet to 21 feet £5 18s. Removals, under 1,000 tons £1; over £3. All other rates similar to Albany.

Accommodation: The harbor is approximately 3½ miles long and 2 miles broad. Channel at entrance, 4,000 feet long, 600 feet wide, depth at low water 33 feet. The bottom is sandy and muddy. Two jetties, one, 600 feet both sides, depth at low water, 30 feet. The other jetty has 2,000 feet berths, with 23 feet at low water. Both are connected with railway. Bunkering is done from hulks.

# **PROBOLINGO** Island of Java, Dutch East Indies

Population: 15,000.

Port Charges: Harbor dues, 16c per cub. metre for 6 months. Charges for labor are moderate.

Accommodation: Good anchorage about one-half mile offshore in 7 fathoms.

Imports: Stores, machinery.

Exports: Castor cil, oil seed, kratok beans, goat skins, sugar, rubber, tobacco, tea, cocoa, coffee, hides, maize, Peruvian bark, cotton, quinine bark, teak wood.

The port is situated 11 miles west of Kraksaan on the north-east coast of the island.

# **PUERTO MONTT** Chile

Population: 4,000.

Stevedoring: Cost for general labor, \$4 to \$6 per day by contract.

Accommodation: Lighters, no moles or cranes. Imports: General merchandise, provisions.

Exports: Lumber, leather, hides, honey, wax, butter. Not desirable for large steamers, dangerous navigation

through channels.



Bird's-Eye View of Harbor at Punta Arenas

# **PUNTA ARENAS** Chile

Position: Latitude 53 degrees 10 minutes south, longitude 71 degrees west. Most southerly port in the country. Because of the sheep and cattle industry in the vicinity of Punta Arenas, this port is developing an extensive export business in meat and wool. There are large refrigerating plants where meat is prepared for shipment by special ship lines operating between Punta Arenas and Buenos Aires, where the cargoes are transhipped on English and American vessels. Punta Arenas has lately completed a modern shoe factory.

Population: About 20,000.

Accommodation: Good harbor in an open roadstead. Anchorage in 6 to 15 fathoms. No docks, but government mole with four steam cranes for small vessels, also landing stage. There are several small private moles.

Machinery, general merchandise.

Imports: Machinery, genera Exports: Wool, meats, furs.

# **PUNTARENAS** Costa Rica

Position: Latitude 9 degrees 58 minutes north, longitude 84 degrees 46 minutes west.

The only Costa Rica port open to foreign trade on the Pacific. Railway connection with San Rose and Limon will shortly be established.

Population: 4,640.

Imports: Cotton fabrics, boots and shoes, hardware, fence wire, canned goods, flour, beans, rice, sugar, provisions, wines, liquors, beers, cigars, furniture, etc.



Exports: Coffee, cedar, mahogany, rosewood, dyewoods, hides, skins, pearls, shells, rubber and manga-

nese.

Accommodation: The estuary, or lagoon, inside, although navigable for vessels of small draft, is no harbor or roadstead has a general depth of 5 fathoms and upwards; level sandy bottom, and good anchorage for vessels of any size, and in all weathers, abreast the town, although the best place to anchor is towards the south-east or west of the pier, commencing about 300 metres from it. The large steamers of the Pacific Mail S. S. Co. anchor within a cable length of the pier. All vessels discharge into lighters, of which there are ten, capable of carrying about 300 tons in all. The iron pier is 425 feet in length, and about 30 feet wide, with an L from the west side; a lighthouse equipped with electric light is placed on the roof of the outer end, at about 40 feet elevation from high water mark. This pier is roofed with iron. There are two donkey engines and a double track rail on pier; the track leads to the Custom House at the head of the pier, and to the various storehouses in the town, freight cars propelled by hand being used. The facilities for handling freight have been greatly enlarged by the erection of a large addition to the Custom House, the building of a new engine, and the purchase of additional cars and launches.

Pilotage: Vessels sail or steam into the anchorage, no towage or pilotage required; but in case of loading up the Gulf they need a pilot, the charge for which is \$17; if on the coast outside the charge is \$34 C. R. Nearly all the lumber and dye-wood is loaded as above Port Charges: Harbor dues, vessels under 50 tons free. From 50 tons to 800 tons, 50 colones and 1 colon

for each additional 100 tons or fraction thereof, with a maximum of 65 colones. Light dues, 10 colones. Vessels arriving in ballast, or for supplies or repairs, do not pay dues or fees. Hospital patients from vessels admitted

to hospital free of charge.

Ballast: When brought here, must be dumped overboard across the Gulf, and when required can be had at the islands on the other side at \$1 per ton delivered alongside, or free of charge when the vessels use their

own boats and men.

Labor: \$1 per diem, with board, for all classes of work (laboring, or in loading or discharging vessels). Water can be had free of charge if ships furnish their own boats and men and casks. Provisions, neither plentiful nor cheap, with a few exceptions. Beef costs 15c C. R. per pound, and potatoes from 5 to 8c, according to the state of the market. Vegetables are scarce, but plantains, yucas, and other tropical plants and fruits are plentiful and very cheap, and are an agreeable substitute.

Discharging: It is customary for ships arriving here to deliver freight to lighters only, the other being all paid by the consignees of merchandise; also the ships' crews to do the necessary work, therefore saving the expense of stevedores.

Brokerage: Ship agency entering, \$25, and leaving

Consular Representation: United States, Italy, Panama, Nicaragua, Peru, Spain, Germany, Chile.
Steamer Lines Using the Port: P. M. S. S. Co., Ward Line, to San Francisco, Cal., and New York, N. Y., respectively. Empresa Transportes Maritimes. Teleportes graphic address: Empresa Puntarenas. Established 1890. Number of steamers owned, 1. Number of motor vessels owned, 14. Ports to which vessels trade: Cristobal, C. Z. and C R. ports along coast. No regular sailings.

# **RANGOON**

### Burma

Position: Latitude 16 degrees 46 minutes north, longitude 96 degrees 10 minutes east.

Population: 293,000. Area: 31 square miles.



Mountain of Rice, Rangeon-Copyrighted by Underwood &

Rangoon is the capital of the province and is situated on the Rangoon river, which is joined with the Irrawaddy river by a waterway. It ranks third among the Indian ports as a center of commerce, and is the greatest rice exporting port in the entire world. Nowhere else are there such huge rice mills and they handle mountains of rice which comes from the north. With the establishment of elevators equipped with suction pumps the facilities for loading the cereal aboard vessels are the best. Most of these elevators have been constructed by foreign capital. Other important industries flourishing in Rangoon are the several large timber saw mills, and innumerable oil works.

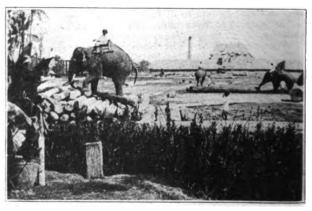
Nearly every variety of timber may be found in the forests of Burma. Teak, which is highly prized for shipbuilding, and also for ornamental carved work, grows in abundance. Other forest products are cutch, lac and rubber. Minerals of many varieties are mined in several different districts. Small quantities of gold have been obtained in the upper reaches of the Irrawaddy. Lead and silver come from the Northern Shan States, and coal, while found in several states, has been developed but little. Tin mining is carried on extensively. Nogok rubies practically supply the market of the world, and these gems can hardly be equalled for beauty. The Shan States have their sapphires in considerable quantities. Jade and amber workings are scattered throughout the Northern Myitkyina.

Petroleum refineries in Rangoon produce kerosene, gasoline, lubricating oil, parrafin and candles for export. The petroleum is obtained in the Irrawaddy valley district, which is about 300 miles from Rangoon.

Imports: Silk, iron, hardware, coal, liquors, metals, sal! tohacco, cotton goods, hardware, seeds, sugar, oils and salts, steel, fish, machinery, woolen goods, umbrellas.

Exports: Rice, cotton, gold, shellac, cutch, cigars, copper, hides, horns, ivory, woods, oil, wax, rubber stick-lac, kerosene oil.

Names of Importing and Exporting Firms: Finlay, Fleming & Co., general merchants; Burma Oil Co.; Indo-Burma Petroleum Co.; Steel Brothers & Co., Ltd., general



Elephants Stacking Timber-Copyrighted by Underwood & Underwood

merchants; Bulloch Bros. & Co., Ltd., general merchants; Balthazar & Son., general merchants; Harperink, Smith & Co., general merchants: Jamal Brothers & Co., general merchants.

Pilotage: Vessels in tow, or steamers between outer station and any place above Elephant Point, up to 9 feet, 20rs; plus 5rs per foot up to 17 feet; 17 to 18 feet, 70rs; 18 to 19 feet, 80rs; 19 to 20 feet, 100rs; above, add 30rs per foot, or 28 feet, 340rs; thence 40rs per foot up to 30 feet; over 30 feet 620rs.

Between Elephant Point and Pilot Station, half fees. Vessels under sail or steamer towing vessels over 100 tons. one-third more, subject to reductions in some cases. Removal from town to below Hasting Shoal or vice versa, 16rs if pilot does not remain in charge. A surcharge of 15 per cent is leviable with certain exceptions. Towage, 5 annas per net reg. ton up or down in ballast loaded 10 up and 12 down; if one way, 7 in ballast, 15 loaded; if ballast up or loaded down, or vice versa, 1r 1 anna; or loaded both ways, 1r 6 annas.

Accommodation: Accessible to vessels of largest tonnage; 26 feet of water on bar ("The Hasting") at neaps; 32 feet at springs: 20 to 26 feet at pontoons and wharves at low water; 6 berths have hydraulic cranes 20 to 35 feet at moorings; 30-ton shears; slips to take vessels of 1,000 gross tons; 25 swinging moorings and 8 fixed mooring berths in harbor; 6 fixed mooring berths for oil steamers.

Port Charges: Port dues, 4 annas; river dues, 6 annas

per ton. Harbor master's fee, per movement, 20rs. Extra for holidays, Sundays and nights. Burma coast dues, 1 a. on vessels under 1,000 tons, 10rs; over 1,000, and not exceedings 2,000, 15rs; over 2,000 and not exceedings 2,000, 25rs. Steamers and sailing vessels of any size can use berths at swinging buoys. Steamers and sailers bringing general cargo must discharge at jetties, and pay as follows: Under 1,000 tons, 42rs per day; 1,000 to 2,000 tons, 48rs; 2,000 to 3,000, 54rs; 3,000 to 4,000, 60rs; over 4,000, 66rs per day. Steamers with passengers only, half above rates. Shearlegs, rates vary with minimum of 25rs per lift.

# **SABANG** Island of Sabang, Dutch East Indies

Position: Latitude 5 degrees 53 minutes 53 seconds north, longitude 95 degrees 20 minutes 10 seconds east.
Port charges: None. They are figured in the rates

for bunkering and wharfage.

Accommodation: The harbor has a clear entrance with safe anchorage in 15 to 22 fathoms. Iron wharves, length 3,000 feet with 30 feet alongside. Storage sheds for coal, cap. 75,000 tons; godowns for storing tobacco and other goods, 62,000 square feet; 5 electric coal transporters; 900 tons automatic motor bunkering barge; 3,000 tons floating dock; liquid fuel tanks, 12,000 tons.

# **SAIGON** Indo-China

Position: Latitude 10 degrees 50 minutes north, longitude 104 degrees 22 minutes east.

Population: 68,000.

Pilotage: Compulsory, francs 0,28 per registered ton

net, if steamer on ballast 34 of the above tax.

Port Charges: Tonnage or wharf dues, none. Cus-Light dues, none. Other charges, sanitoms, none.

tary tax \$10.

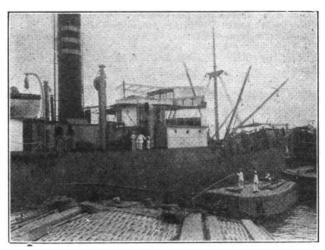
Stevedoring: Rates for loading cargo, per ton—Rice \$0.18, paddy, maize, rice meal \$0.20, rice brand \$0.25, general cargo \$0.30 to \$0.50. Rates for discharging cargo, general, \$0.30 to \$0.50, coal \$0.40. Overtime cost per hour, customs 3 francs per hour; loading and discharging, double rate. Cost per hour for general labor, Coolies \$1 per day; shifting coal in bunkers \$0.50 per ton. Lighterage, cost per lighter per day, \$45 for 150 tons lighter, \$15 for 50 tons.

Accommodation: Quay of 1200 yards long, 27 buoys, accommodating steamers of any draft. Drydocks of the accommodating steamers of any draft. Dividecks of the mavy, length 150 meters, can take steamers of 6,000 tons gross tonnage. Tax, for a steamer of 3,000 tons gross, first day 1,430 francs, other days 572 francs; for a steamer of 6000 tons gross, first day 2210 francs, other days 884 francs.

Exports: Rice, rubber, copra, pepper, hides, vegetable oil, fish oil, dry fish, cotton, maize, gutta percha,

silk, teak, gum.

Imports: Piece goods, machinery coal, general, etc. Names of Importing and Exporting Firms: Compagnie de Commerce et de Navigation d'Extreme Orient, Bothet, Chriere & Co., Denis Freres, St. Com de Fse de l'Indochina, Oglisstro & Co. Dumarest &



Loading Rice for Shipment to San Francisco

Steamer Lines Using the Port: Messageries, Maritimes, Chargeurs Reunis, Ocean S. S. Co. Ltd., China Mutual S. S. Navigation Co. Ltd.

Consular Representation: Belgium, Great Britain, Italy, Japan, Netherlands, Norway, Portugal, Siam, Spain, Sweden, United States (Horace Remillard, consul).

This port affords every facility for repairs of steamers.

# ST. MICHAEL Alaska

Latitude 63 degrees 28 minutes north, longitude 162 degrees west.

Distance from Seattle, 2,487 miles.

Population, 500.

Harbor: Located on St. Michael island, north of mouth

of Yukon river.

Steamship Lines: Alaska S. S. Co., Pacific S. S. Co. and irregular steamers during the open season of five months.

Wharves: All freight lightered by Alaska Lighterage & Commercial Co.

## **SALAVERRY** Peru

Population: 3,000.

Port Charges: Tonnage or wharf dues, none. Light dues, 1 cent gold per ton. Other charges, anchorage dues 10 cents gold per ton.

Stevedoring: Rates for loading and discharging cargo: \$2.50 per ton. Overtime cost per hour, \$0.20. Cost per hour for general labor, 30 cents gold per hour. Lighterage, cost per ton, \$1.80. Lighterage, cost per lighter per day, subject to tariff.

Accommodation: One mole of 300 meters long. Water from pipes on wharves, or from tanks alongside, \$3.80. Floating dock 300 feet long, capable of taking a vessel of 3,000 tons and 17½ feet draft.

Charges: For sailing ships, first day, 50c ton; each day thereafter, 25c per ton. Steamers, first day, \$1 per ton; next four days, 75c per ton; after that 50c per ton charged on gross tonnage.

Imports: Dry goods and miscellaneous articles,

metals, tools.

Exports: Sugar, minerals, rubber, wool, alcohol.
Names of Importing and Exporting Firms: The Salaverry Agencies Co., Cartavio Sugar Co., Acharan Goicochea & Co., Alberto Somarruga, J. Ignacio Chopitea.

V. I, arco.

Steamer Lines Using the Port: The Pacific Steam Navigation Co., Compania Peruana de Vapores, Compania Sud Americana de Vapores, North and Pacific Line, New York & Pacific Steamship Co.

Consular Representation: Republic of Chile by Consul, Ecuador by Consul, Panama by Vice Consul, Great Britain by Vice Consul, United States by Consular

Agent.

# SAN DIEGO California

Position: Latitude 32 degrees 43 minutes north, longitude 117 degrees 10 minutes west.

The Bay of San Diego was discovered 370 years ago by the navigator Cabrillo, and from that time to the present it has been recognized among mariners as one of the most excellent harbors in the world.

One of the many cogent reasons why this port should become a logical distributing center of the Southwest is that it is the proper gateway of ingress and egress, being the first port of call in the United States territory for all incoming vessels, and the last port of call for all outgoing vessels plying between

United States Pacific ports and the canal.

The Bay of San Diego has an area of 22 square miles, is completely land-locked, and has a depth of water over the bar at low tide of 39 feet. The main channel inside the bay will average from 1,500 to 2,000 foot in width and from 30 to 70 feet in which and from 30 to 70 feet in which and from 30 to 70 feet in which and from 30 to 70 feet in death at the contract of the second feet in width and from 39 to 70 feet in depth, at low water. By act of the state legislature May, 1911, the City of San Diego was granted absolute control of its waterfront, and the tidelands adjacent thereto.

Main channel, 2000 feet wide. The city has spent recently \$1,400,000 for harbor improvements, and \$300,000 is to be spent immediately by the U. S. Government for deadging.

ment for dredging.

The Santa Fe Railroad Co. has expended \$500,000 on a new depot, and this includes the cost of an enormous freight warehouse and Spreckels Bros. Commercial Co. has facilities for storage, the Pioneer Truck Co., also. The climate, of course, is such that places do not have to be constructed as substantially as would

be necessary in other states, and certain goods might be stored advantageously in the open.

Accommodation: Municipal Pier, 1,600 linear feet; West Santa Fe, 700 feet; East Santa Fe, 600 feet; Pacific Coast S. S. Co., 800 feet; Bunkers Wharf, 600 feet. All having available draft of 32 feet at lower low water. Range of tide—mean, 5 feet; extreme, 8 feet 6 The city is preparing plans for an additional inches.

pier and warehouse.

Wharfage: Merchandise must be removed from the wharf before 5 o'clock p. m. on the day following the one on which it was placed thereon; but the Wharf-inger is hereby authorized, when the owners or consignees of merchandise desire it, and it can be done without interfering with the business of the wharf, to allow merchandise to remain on the wharf after the prescribed time, at a wharfage charge equal to an additional toll for every 48 hours or part thereof, Sundays and legal holidays excepted. If merchandise be not removed within 24 hours after notice by the Wharfinger, it shall be liable to the penalties of Section 2524 of the Political Code. No merchandise for

outbound shipments shall be placed upon any wharf, pier or thoroughfare before 8 o'clock a. m. on the day preceding the arrival of the vessel to carry such merchandise, without first obtaining permission from the Chief Wharfinger.

Lumber discharged from vessels carrying 500,000

feet board measure or over, and from vessels of no lesser capacity, may remain on wharf until 5 o'clock p. m. of the third day following its discharge. Then and thereafter all provisions of the above rule shall

be effective and must be enforced.

Wharfage and Tolls—How Enforced: For the purpose of enforcing the charge of wharfage or tolls on goods, wares, and merchandise landed on any wharf, pier or thoroughfare, or remaining thereon longer than the time prescribed by the harbor regulations, the Chief Wharfinger is authorized to take possession of such goods, wares, and merchandise, and if such charge be not paid within two days thereafter may remove and store the same at the charge, risk and expense of the owner or consignee thereof, or may sell the same by public auction with or without notice, at his discretion.

Wharves-How Cleared: And for the purpose of keeping the wharves, piers, basins, channel and thoroughfares free of obstructions, the Harbor Master, shall cause a written notice to be served on the owner, agent, consignee or person in possession of any such obstructing material or structure, or may post a notice thereon, at his discretion, requiring its removal within 24 hours thereafter, and on failure to comply therewith the Harbor Master may remove, store, or sell the same at public auction, at his discretion. From the pro-ceeds of any such sale, shall be retained all the wharfage and tolls due with 10 per cent thereon, and in case of obstruction, twenty-five (\$25.00) for each and every day during which the wharf, pier or thoroughfare has been obstructed, and also all the expenses attending such sale, and the surplus, if any, shall be paid to the proper party. Such sale shall be made subject to immediate removal.

Berth Privilege: The assignment of berth privilege includes only the right of the person or firm making application therefore, to dock vessels owned or operated by said person or firm at such berth; subject to the provision that when such berth be unoccupied the Chief Wharfinger may dock other vessels thereat. Such assignments do not include either dockage, tolls,

or wharfage.

Assignments of wharf privilege and all other assignments of space on wharves or other property of the city under the jurisdiction of the Common Council of the City of San Diego, are not transferable. For-feiture of the assignment of privilege is the penalty for the violation of this rule.

Fuel oil is obtainable in any quantity, but coal is now available at Pacific Wood & Coal Co.

All vessels carrying oil for fuel must store the same

in steel, metal or iron tank,

No vessel carrying oil for fuel in wooden tanks or wooden compartments shall be allowed to lie alongside or make fast to any other vessel while the same is lying at such dock, pier, or wharf, or to lie alongside or make fast to any structures under the juris-diction of the Common Council of the City of San

All oil for fuel purposes must be delivered through a steam pump so as to pump the oil into the vessel to be supplied as quickly as possible, and vessels carrying oil for fuel must be kept clear of rubbish, etc.,

which is liable to catch fire from sparks.

No vessels loaded with Coalinga oil, or any other oil which will flash below 110 degrees Fahrenheit, shall be permitted to haul alongside of any vessel or structure.

No vessel engaged in the business of supplying fuel oil shall be allowed when empty to haul or lie along-side any vessel dock, pier or wharf. Any vessel after having discharged oil must immediately haul away

from vessel or structure and depart.

No person, firm, association or corporation shall discharge or deposit, or shall cause or suffer to be

discharged or deposited, or to pass, in or into the waters of the Bay of San Diego any coal tar or refuse or residuary product of coal, petroleum, asphalt, bitumen or other carbonaceous material or substance. Every person, firm, association or corporation that violates the above rule will be prosecuted.

There is also 2.675 feet of bulkhead with a minimum depth of 20 feet at low tide. Santa Fe tracks run to their own wharf and to the Spreckels Bros.' wharf. The Municipal Dock has two tracks on each side of the warehouse and this has been joined to the Santa Fe by a municipal belt railway. The Santa Fe is the only road having a terminal at this time, and the San Diego & Arizona Railroad is now building eastward and will be open to traffic about July 1st. 1919.

#### Rates for Dockage

For the first two hundred (200) tons or less, one (1) cent per ton (net tonnage). For each additional ton above two hundred (200) tons, 3% of one (1) cent per ton (net tonnage) per day for 24 hours or fraction thereof.

Full dockage rates shall be charged on all vessels docking at any municipal wharf, except as hereinafter specified.

Half rates charged as follows:

Vessels with no cargo on board while lying idle at wharf.
(2) Vessels while receiving or discharging ballast or

receiving stiffening.

(3) Vessels discharging, loading or lying idle, while occupying outside berths.

(4) Vessels while moored in docks, slips, basins, or

canals.

(5) Vessels engaged in towing and vessels not engaged in carrying freight and passengers not entitled to half rates.

(6) Vessels with no cargo on board, while under-

going repairs.

When the per diem dockage of a vessel, as above described, is not a multiple of five it must be reduced or increased, as the case may be, to the nearest such multiple; provided, that if it be equally near to two such multiples, it must be increased to the first such multiple above.

All bills for dockage must be paid when due, whether approved by the master or not. Failure to pay such bills on presentation will subject the vessel to be placed on the Delinquent List, and to the penalties provided by law. Errors if any, will be rectified by the Council.

When a vessel of any kind is charged or has paid dockage at a wharf for any day, she may use the same or any other wharf during that day without further charge, no matter how often she may leave and return; provided a receipt for payment or transfer card from the wharfinger at the first wharf be produced, and on application of the master the wharfinger is required to issue such transfer card.

Stevedoring rates for loading and discharging cargo, general, 80 cents per hour, merchandise, \$1.20 per hour; coal, 90 cents to \$1.30 per hour; warehouse to car, 65 cents per hour. Lighterage, cost per lighter per day, \$3.50.

### Rates of Dockage on Lighters

A dockage of ½ cent per ton (net tonnage) per day will be charged on all lighters in the following cases:

When discharging or loading at a wharf.

(2) When discharging into or loading from a vessel lying at wharf, or when lying at a wharf or in a slip with or without cargo on board.

#### Water Rates

For the first 1,000 gallons or less, 25c, and 10c additional for each 1,000 gallons or fraction thereof.

### Floating Cranes

There are three floating cranes in the San Diego harbor, all of which are available for handling cargo, and in addition to which, the Municipal Pier has a locomotive crane.

#### Federal Officers

U. S. Public Health Service, Dr. A. L. Derbyshire,

Act'g Ass't Surgeon.
Immigration Service, D. S. Kirkendall Inspector in

Charge, 230 Federal Bldg.

Weather Bureau, H. F. Alciatore, 325 Federal Bldg. War Department, Col. Kephart, Fort Rosecrans. Quarantine Station, Dr. A. L. Derbyshire, U. S. Quarantine Officer.

Bureau of Animal Industry, J. E. Cloud Inspector in

Customs, Clarence D. Sprigg, Deputy Collector. Internal Revenue, J. C. Westcott deputy Collector. Officer in Charge of Naval Station, Lieut. E. A. Swanson

#### Consuls

British: Major H. D. Gerard, Vice Consul. French: Consular Agent.

Norwegian: John Engebretson, Vice Consul.
Swedish: Nils Malmberg, Vice Consul, 3435 C St.
Bolivia: Philip Morse, Consul.
Honduras: Marcos Martinez, Vice Consul.
Netherlands: J. H. Delvalle, 1535 28th St.
Peru: E. J. Louis, Vice Consul.
Mexico: Raul Dominguez.

#### Towage Rates

Towboat service (not compulsory) is rendered at a

fixed scale of compensation as follows:

Per Net Registered Ton: To sea, San Diego to
Whistling Buoy. If towed from Whistling Buoy to San Diego charge the same as to sea. Docking and undocking included in these rates if vessel proceeds im-

undocking included in these rates if vessel proceeds immediately to or from dock. (Figures in parenthesis is charge for docking and undocking):
400 and under 600, \$50 (\$15); 600 and under 800, \$65 (\$17.50); 800 and under 1,000, \$75 (\$20); 1,000 and under 1,250, \$90 (\$22.50); 1,250 and under 1,500, \$100 (\$25); 1,500 and under 1,750, \$110 (\$27.50); 1,750 and under 2,000, \$120 (\$30); 2,000 and under 2,250, \$130 (\$32.50); 2,250 and under 2,500, \$140 (\$35).

Coastwise Vessels: To or from sea, as above. (Figures in parentheses is charge for docking):

Coastwise Vessels: 10 or from sea, as above. (Figures in parentheses is charge for docking): 100 and under 150, \$15 (\$5); 150 and under 200, \$17.50 (\$5); 200 and under 250, \$20 (\$5); 250 and under 300, \$22.50 (\$5); 300 and under 350, \$25 (\$5); 350 and under 400, \$27.50 (\$5.50); 400 and under 450, \$30 (\$6); 450 and under 500, \$32.50 (\$6.50); 500 and under 550, \$35 (\$7); 550 and under 600, \$40 (\$8). The Board of Pilots for the Port of San Diego makes the rate of \$1 per foot draft and 1c per ton register

the rate of \$1 per foot draft and 1c per ton register of all vessels touching San Diego with port cargoes—for fuel, or water and stores; and \$2 per foot, and 2c per ton on net register on all vessels coming with a full cargo for this port. The board will make special rates to regular lines.

### List of Buoys, San Diego Bay

Point Loma Light Station, white, square, 32,000 candle-power. Point Loma Unused Lighthouse, tower on dwelling. Outside Bar Whistling Buoy, black and white perpendicular stripes, conical. Outside Bar Bell Buoy, black, flat float, skeleton pyramid superstructure. Outside Bar Gas Buoy, black, conical, pyramidal skeleton superstructure, 160 candle-power. Gammon Shoal Buoy, red. San Diego Bar Inside Buoy, red. Ballast Point Light Station, white, tower on dwelling, 650 candle-power. San Diego Bay Cut Buoy, black. San Diego Bay Cut Buoy, red. San Diego Entrance Front Light, red white, triangular skeleton daymark with structure, black stripe, 35 candle-power. La Playa Light, white, on roof of storehouse, 280 candle-power. San Diego Bay Beacon, black, three piles crossed with



slats. San Diego Bay Beacon, red, three piles crossed with slats. Light No. 3, black, lamphouse on piles, 160 candle-power. Light No. 6, red, lamphouse on piles, 50 candle-power. Light No. 5, red, triangular skeleton structure, 120 candle-power, three piles crossed with slats. Light No. 10, black, lamphouse on piles, 50 candle-power. San Diego Bay Beacon, black, three piles crossed with slats. San Diego Bay Beacon, red, three crossed with slats. San Diego Bay Beacon, red, three piles crossed with slats. Oil Wharf Bucy, red and black, horizontal stripes.

Some of the principal importing and exporting firms are Alfred Staehl & Co., Simon Levi Co., Premier Packing Co., Lower California Fisheries Co.

Harbor Master: Joseph W. Brennan,

Imports: (12 months 1918): Foreign, 7900 tons; value, \$644,309. Domestic and local, 454,552 tons, value \$12,603,518.

Exports: (12 months 1918): Foreign, 7,983 tons; value, \$503,963. Domestic and local, 26,173 tons; value, \$1,677,186.

# SAN FRANCISCO California

Steamer Routes

The following lines run from San Francisco to foreign ports:

To Europe: Blue Funnel Line, Maple Leaf Line, Harrison Direct Line, reported establishment of Cunard Line

To the Orient: T. K. K., Mitsui & Cc., O. S. K., Pacific Mail (to Saigon, Straits Settlements, India and Ceylon), China Mail, Struthers & Dixon, Java Pacific Line (Java ports as well as Oriental ports).

To Siberia: Struthers & Dixon, Robt, Dollar Co.

(occasional sailings).

To Honolulu: Matson Navigation Co.

To the West Coast of South America: W. R. Grace & Co., T. K. K.



The Heart of the City

To Australia and New Zealand: Spreckels Line. Union S. S. Co.

To Mexican Ports: Pacific Mail.
Position: Latitude 37 degrees 47 minutes 28 seconds west, longitude 122 degrees 25 minutes 43 seconds north. Population, 551,000.

#### **Ouarantine**

The quarantine grounds of the bay and harbor of San

Francisco are at the anchorage of Sausalito.

Shipmasters bringing vessels into the harbor of San Francisco, and masters, owners or consignees having vessels in the harbor, which have on board any cases of Asiatic cholera, smallpox, yellow typhus or ship fever, must report the same, in writing, to the quarantine officer before landing any passengers, casting anchor, or coming to any wharf, or as soon thereafter as they, or either of them, become aware of the existence of either of the diseases on board of their vessels.

No captain or other officer in command of any vessel sailing under a register, arriving at the port of San Francisco, nor any owner, consignee, agent, or other person having charge of such vessel, must, under a penalty of not less than \$100 nor more than \$1,000, land or permit to be landed, any freight, passengers, or other persons from such vessel until he has reported to the quarantine officer, presented his bill of health, and received a permit from that officer to land freight, passengers, or others persons.

Every pilot who conducts into the port of San Francisco any vessel subject to quarantine or examination by the quarantine officer must:

1. Bring the vessel no nearer the city than is allowed by law:

2. Prevent any person from leaving and any communication being made with the vessel under his charge, until the quarantine officer has boarded her and given the necessary orders and directions;

3. Be vigilant in preventing any violation of the quarantine laws, and report, without delay, all such violations that come to his knowledge to the quarantine officer;

4 Present the master of the vessel with a printed copy of the quarantine laws, unless he has one;

5. If the vessel is subject to quarantine, by reason of infection, place at the masthead a small yellow flag.

Every master of a vessel subject to quarantine or visitation by the quarantine officer, arriving in the port of San Francisco, who refuses or neglects either:

1. To proceed with and anchor his vessel at the place assigned for quarantine, when legally directed so to do;

or,

2. Submit his vessel, cargo, and passengers to the quarantine officer, and furnish all necessary information to enable that officer to determine what quarantine or other regulations they ought respectively to be subject; or,

3. To report all cases of disease and of deaths occurring on his vessel, and to comply with all the sanitary regulations of the bay and harbor;—is liable in the sum of \$500 for every such neglect or refusal.

All vessels arriving off the port of San Francisco from ports which have been legally declared infected ports and all vessels arriving from ports where there is prevailing, at the time of their departure, any contagious, infectious, or pestilential diseases, or vessels with decaying cargoes, or which have unusually foul or offensive holds, are subject to quarantine, and must be, by the master, owner, pilot, or consignee, reported to the quarantine officer without delay. No such vessel must cross a right line drawn from Meiggs' wharf to Alcatraz Island until the quarantine officer has boarded her and given the order required by law given the order required by law.

The quarantine officer must board every vessel subject to quarantine or visitation by him, immediately on her arrival, make such examination and inspection of vessels, books, papers, or cargo, or of persons on board, under oath, as he may judge expedient, and determine whether the vessel should be ordered to quarantine, and if so, the period of quarantine.

No captain or other officer in command of any passenger-carrying vessel of more than 150 tons burden, nor of any vessel of more than 150 tons burden, nor of any owner, consignee, agent, or other person having charge of such vessel or vessels, must, under a penalty of not less than \$100 nor more than \$1,000, land or permit to be landed any passenger from the vessel until he has presented his bill of health to the quarantine officer and received a permit from that officer to land such passenger, except in such cases as the quarantine officer deems it safe to give the permit before seeing the bill of health.

The following fees may be collected by the quarantine officer: For giving a permit to land freight or passengers, or both, from any sailing vessel of less than 500 tons burden, from any port out of this state, \$2.50; over 500 and under 1,000 tons burden, \$5; each additional 1.000 tons burden, or fraction thereof, an additional \$2.50; for steam vessels, propelled in whole or in part by steam, of 1,000 tons burden or less, \$5; and \$2.50 for each additional 1,000 tons burden, or fraction thereof; but vessels not propelled in whole or in part by steam, sailing to and from any port or ports of the Pacific States, of the United States, or territories, and whaling vessels entering the harbor of San Francisco, are excepted from the provisions of this section.

The board of health may enforce compulsory vaccination on passengers in infected ships, or coming from infected ports.

#### Pilotage

Every pilot in charge of a vessel arriving in the port or harbor of San Francisco must safely moor the vessel in such position as the master of the vessel or harbor master may direct. He must prevent all persons (except officers of the State or Federal governments, owners or consignees of the vessel or cargo, and persons admitted on the express orders of the master) from boarding such vessel until she has been safely moored. To enforce the provisions of this section and other police regulations for the harbor, every pilot in charge of a vessel entering the harbor of San Francisco is authorized and empowered to arrest every one who, in opposition to the master's orders, persists in boarding such vessel, or who, having boarded her, refuses to leave on command of such master or pilot; when so arrested, he must be immediately brought before the police judge's court, or admitted to bail, as provided in the Penal Code.

The pilotage inside the heads to the anchorage opposite San Francisco and about the harbor, or between the harbor of San Francisco and the ports of Mare Island, Vallejo, or Benicia, must be at such rates as agreed on between the parties, not to exceed \$5 per foot draft.

The following shall be the rates of pilotage into and out of the harbor of San Francisco: All vessels under 500 tons, \$2 per draft foot; all vessels over 500 tons, \$2 per draft foot, and 2c per ton for each and every ton registered measurement; and every vessel spoken inward or outward bound, except as hereinafter provided, shall pay the said rates. A vessel is spoken by day by a pilot displaying a union jack, or by night displaying a torch or flare up within a distance of three (3) miles of the vessel. In all cases where inward bound vessels are not spoken until inside the bar, the rates of pilotage herein provided shall be reduced 50 per cent. Vessels engaged in the whaling or fishing trades shall be exempt from all pilotage except where pilot is actually employed.

In the event of a vessel not carrying cargo to the port of San Francisco, nor seeking any thereat is compelled to enter said port solely by reason of her being in distress and requiring either repairs, provisions or fuel, the rates of pilotage into said harbor shall be as follows: All vessels under 500 tons, \$1 per draft foot; all vessels over 500 tons, \$1 per draft foot and 1c per ton for each and every ton registered measurement; and every vessel spoken inward bound shall pay the said rates. There shall be no reduction of rates of pilotage to vessels in distress where the vessel is spoken inside the bar. In the event that the said vessel shall leave the port of San Francisco without carrying any cargo there-



Just Inside the Harber Entrance

from, she shall pay the last mentioned rates of pilotage out of the harbor of San Francisco.

Any vessel in tow of a steam tug, between the harbor of San Francisco and the ports of Mare Island, Vallejo, or Benicia, shall be exempt from all charges for pilotage, unless a pilot be actually employed.

All vessels sailing under an enrollment, and licensed and engaged in the coasting trade between the port of San Francisco and any other port of the United States, shall be exempt from all pilotage unless a pilot be actually employed. All foreign vessels, and all vessels from a foreign port, or bound thereto, and all vessels sailing under a register between the port of San Francisco and any other port of the United States, shall be liable for pilotage and half-pilotage as provided in Section 2466 of this Code.

When two or more pilots shall offer their services to any vessel inward bound, the pilot first offering, or one connected with the same boat, shall have preference, and if the services of another be accepted, the vessel, her appurtenances, and the master and owner thereof, shall be jointly and severally liable to the pilot entitled to such preference for one-half the amount of pilotage he would have been entitled to had his services been accepted.

Any pilot bringing a vessel into the harbor of San Francisco (or one connected with his boat) shall be entitled to take such vessel to sea again when she next departs; provided, such pilot and those connected with his boat have not in the meantime become in any manner disqualified or incapacitated; and if such preference be disregarded by the master of such vessel, the vessel, master, and owner shall be liable to the pilot entitled to such preference for one-half the amount to which he would be entitled if his services had been accepted.

#### Harbor Control

The chief wharfinger shall keep an office in some convenient place upon the city front, between Market and Pacific Sts., which shall be kept open every day (Sundays and holidays excepted), from 7 a. m. till 6 p. m. \* \*. And it shall be the duty of all pilots, masters of tugboats, masters, owners and consignees of vessels, to obey all lawful orders and directions of the chief wharfinger, in relation to the stationing, anchoring, and removal of vessels under and pursuant to such rules and regulations. The chief wharfinger is empowered to determine cases of collision by consent of all parties interested, and where damages do not exceed \$300 the decision is final.

If any master, agent, or owner of any water craft shall refuse or neglect to obey the lawful orders or directions

of the chief wharfinger in any matter pertaining to the regulations of said harbor, or the removal or stationing of any water craft, such master, agent, or owner so refusing or neglecting is guilty of a misdemeanor, \* \* \*.

All persons are forbidden to deposit, or cause to be deposited, in the waters of the harbor of San Francisco, as described in the preceding sections, any substance that will sink and form an obstruction to navigation, without first obtaining permission in writing of the board of state harbor commissioners. \* \* Any person violating the prohibition contained in this section is guilty of a misdemeanor.

### Anchorage Regulations

1. Vessels must not be anchored nor moored between a line drawn from the outer end of Jackson-street Wharf (Pier No. 5) to the most southerly point of Yerba Buena Island locally known as Goat Island; thence following northerly along the shore line of said island to the most northerly point thereof; thence southeasterly to the northerly pier of the Southern Pacific Co., on the Oakland side of the bay; thence southerly, following the threefathom contour to the westerly end of the Southern Pacific training wall of Oakland Harbor, and a line drawn from the outer end of Mission St. No. 1 (Pier No. 2) to the above mentioned ferry slip of the Southern Pacific Co. Nor must they be anchored so as to permit them to swing over these lines and into the space formed between these lines.

2. Vessels must not be anchored nor moored between a line drawn from the outer end of the Hay wharf to the lighthouse near the westerly end of the northerly training wall of Oakland Harbor and a line drawn from the outer end of the most southerly wharf of the Dry Dock wharves at Central basin to the westerly end of the Southern Pacific Co.'s ferry slip near the westerly end of the southerly training wall of Oakland Harbor; nor must the vessels be anchored so as to permit them to

swing between said lines.

3. Vessels must not be anchored nor moored between a line drawn from the most easterly point of Point Blunt on Angel Island), passing over Blossom Rock as marked by buoy, and intersecting the 500 yard limit at a point directly north of the outer end of Lombard Street Wharf (Pier No. 27). This line projected would touch the outer end of Washington Street Wharf (Pier No. 3) and a line drawn from the northwesterly end of the grain shed of section 1 of the seawall, with the light on Alcatraz Island; and from there to Blunt Point on Angel Island; nor must vessels be anchored so as to permit them to swing between said lines.

4. Vessels must not be anchored, nor moored, between

a line drawn from the outer end of Mission Street Wharf No. 1 to the westerly point of Point Richmond; and a ine drawn from the outer end of Lombard Street Whari through the buoy anchored at the southerly spit of Southampton Shoal and prolonged to opposite Point Richmond, nor must they be anchored so as to permit them to swing

between said lines.

5. Vessels must not be anchored, nor moored, within 500 yards of a line drawn from the extreme northerly end of the sea wall, southerly through the extreme outer ends of the piers, to the outer end of Berry Street Wharf, nor must they be anchored so as to permit them to swing

between said lines.

- 6. Vessels must not be anchored, nor moored, tween a line drawn from the westerly end of the brick fort at Fort Point to the westerly end of the lighthouse station on Lime Point and a line drawn from the Fulton Iron Works to Yellow Bluff; nor must they be anchored so as to permit them to swing inside of these lines.
- 7. Vessels must not be anchored, nor moored, between a line drawn from Yellow Bluff to Point Knox and a line drawn from the southerly end of cove (south of Sausalito Point) to Point Stuart; nor must they be anchored so as to permit them to swing inside of these

Vessels must not be anchored, nor moored, in an area bounded on the seaward side by a straight line from

Point Bonita to a point on the shore of South Bay, onehalf statute mile to the seaward of the large cable sign at Baker's Beach, on the inside of a straight line running from a point in Bonita Cove, one-half statute mile from the Fort Barry Wharf (which is the only wharf in Bonita Cove) to a point on the shore of South Bay, one-half statute mile inside, or north by northeast of the large cable sign at Baker's Beach; nor must they be anchored so as to permit them to swing into this forbidden area.

734. Vessels must not be anchored, nor moored, in

an area extending from the water front of the city and county of San Francisco to the mouth of Oakland Creek; bounded on the southerly side by a line extending from the intersection of the northerly line of Islais Creek channel with the water front of the city and county of San Francisco, to the westernmost point of the wharf at the end of the Alameda mole; on the northerly side by a line parallel with the said southerly line and 500 yards distant therefrom; nor must vessels be anchored so as to permit them to swing into this forbidden area.

### Rates of dockage

The entire system of port charges and facilities in San Francisco is so rapidly undergoing changes and revisions that it is impractical at this time to quote definite rates and facilities. Information desired on this account should be a subject of direct inquiry.

All bills for dockage must be paid when due, whether approved by the master or not. Failure to pay said bills on presentation will subject the vessels to be placed on the Delinquent List, and to the penalties provided by law.

Errors, if any, will be rectified by the board.

When a vessel of any kind is charged or has paid dockage at a wharf for any day, she may use the same or any other wharf during that day without further charge, no matter how often she may leave and return; provided, a receipt for payment or transfer card from the wharfinger at the first wharf be produced; and on application of the master the wharfinger is required to issue such transfer card.

### Stevedore Rates Discharging

Foreign wheat at Port Costa or South Vallejo warehouses \$0.55  Coal, ore products 65  Sugar in mats or baskets, at refineries 60  Hawaiian and Philippine sugar at refineries 60  Cement, nitrate (ship's slings) 50  Salmon 50  Copra, in bulk 85  Sulphate of ammonia, fertilizer, sulphur, pineapples 70  Sheet iron or bar iron under 3 in. in diameter, gas and water pipe 1.10  Bar iron 3 in. or over, structural iron, plates, angles, beams, girders, blooms 1.60  Pig iron, ballast, chalk, cliffstone 70  Railroad iron 90  Coke and carbon 1.10  Slab and block marble, up to 2 tons 2.30  Weight, over 2 tons—Special rate 82  Bean oil, in cases 85  Wool, hemp and cotton (measurement) 55
General merchandise (weight or measurement, which- ever is greater)
Loading
Wheat, flour, barley, beans, bran and oats
Sheet iron, bar and bundle iron under 3 in. in diameter.
gas and water pipe
blooms



PACIFIC PORTS ANNUAL
Lumber, 1,000 ft. B. M
Loading and Discharging Cars
General \$0.60 Wool, hemp
Cost of Fuel
Approximate Cost of Fuel: Good steam coal, per ton,

2,240 pounds, about \$12.50, plus 35c trimming. Fuel oil, per barrel, \$1.48 F. O. B. ship's tanks.

Ship Lining: Ship companies pay 7c net per ton. Custom provides for work being done at stevedore labor (50c) rates, ship company buying materials.

Ballast: Ordinary, delivered in ship, per ton, 80c. Rock, delivered in ship, per ton, \$1.25.

San Francisco has the most complete harbor belt line railroad switching system in the country. It connects all piers with the railroads entering the city with ware-houses and industries and with the U. S. Transport Docks. The switching charge on the Belt Line R. R. is \$2.50 per car, south of the Fort Mason tunnel.

### Location of Piers of San Francisco (North of Market Street)

The number of the piers of the San Francisco Water-front begin at the Ferry Building at the foot of Market Street and range northward and southward from that point. The even numbers are to the south, while the odd numbers are to the north.

Pier A—North end of the Ferry Building.

" 1—Foot of Washington Street.

" 2—" " Izekson Street. Jackson Street. Pacific Street. " " " Broadway Street. " Vallejo Street. Vallejo Street. Green Street. 11 " 17 Union Street. " 10. .. Union Street. •• 21-Filbert Street. 23 25 Greenwich Street. Lombard Street. " " 27-29-" " Lombard Street. Chestnut Street. 31 Francisco Street. Bay Street. North Point Street. " 35 46 " 37 North Point Street. 39. Beach Street. Jefferson Street. (South of Market Street) South end of Ferry Building. 14-16--Foot of Howard Street. Folsom Street. Folsom Street. 20-22. 24 " " Folsom Street. " Harrison Street. 26 Harrison Street. 28 Bryant Street. Bryant Street. 30 " " " 32 Brannan Street. Townsend Street. Townsend Street. 36 " " 38 40 Townsend Street. Berry Street. Berry Street. 42 Second S Street.

Fourth Street.

Third Street Wharf-Foot of Third Street. Channel Street Wharf-Wharf along Channel Street. China Basin Bulkhead Wharf-Along China Basin. Army Street Wharf-Pier at present mouth of Islais Creek.

#### Bonded Warehouses

Broadway U. S. Bonded Warehouse, Broadway and Battery.

Oriental Warehouse, Office Merchants Exchange. Sanborn, W. B., Vallejo Bonded and Free Warehouse, Battery and Broadway.

Southend Warehouse Co., 631 2nd.

Security Bonded Warehouse, Spear and Folsom Sts. Townsend St. Bonded and Free Warehouse, 135 Townsend.

Zeile, Edward C., Sea Wall U. S. Bonded Warehouse, 1501 Sansome.

#### Foreign Consuls

Argentina-Horacio Bossi Caceres, C. G., 110 Sutter St., Sutter 1985.

Belgium-F. Drion, C. G., 311 California St., Sutter 2633

Bolivia-Alberto Palacioa, C. G., Holbrook Bldg., Sutter 1455.

Brazil-Victor F. da Cunha, 105 Montgomery St., Douglas 523.

Chile-Arturo Lorca, C., 311 California St., Douglas 2547.

China-Chao Hsin Chu, C. G., 617 Montgomery St., China 265.

Columbia—Francisco, Valencia, C., 311 California St. Costa Rica—C. G., 510 Battery St., Douglas 1917. Cuba—B. E. Puyans, C., 58 Sutter St., Sutter 3192. Denmark—E. C. Schmiegelow, A. C., 408 Mills Bldg.,

Sutter 1309.

Dominican Rep.—John Barneson, H. C., 310 Sansome St., Sutter 940.

Écuador-Dr. Manuel C. de Vaca, C. G., 235 Montgomery St., Sutter 1007

France—J. Neltner, C. G., 110 Sutter St., Douglas 1743. Great Britain—A. Carnegie Ross, H. B. M. G. C., 268

Market St., Sutter 5290. Greece—M. Tsamados, C. G., Phelan Bldg., Sutter 4192. Guatemala—F. C. Avila, A. C. G., 460 Montgomery St., Sutter 192.

Haiti-Eustorjio Calderon, C, 561 Hyde St., Franklin 495

Honduras—Timoteo Miralda, C G, 341 Montgomery St, Sutter 2115

Italy—Cav. Oreste da Vella, R C G, 550 Montgomery

St. Douglas 4378 Japan—T. Ohta, C. G., 221 Sansome St., Douglas 5082. Mexico—R. P. De Negri, C. G., 519 California St.,

Kearny 1436. Netherlands-H. A. van Coenen Torchiana, C. G., 664

Mills Bldg., Sutter 5039.

Nicaragua-Alfredo Gallegos, C. G., Insurance Bldg. Norway—Nils Voll, 260, California St., Sutter 5993. Panama—Francisco Jimenex, C., 460 Montgomery St.,

Garfield 2421. Paraguay-M. C. Richter, H. C., 209 Post St., Garfield

1245. Persia-Thos. W. Firby, A. C., 828 Mills Bldg., Douglas 2684.

Peru-Luis Alvarez Calderon, C., 510 Battery St., Sut-

ter 6419. Portugal—Jose Soares, C., 345 Front St., Sutter 6919.

Russia—Geo. S. Romanavosky, C., 701 Flood Bldg., Douglas 5276. Salvador—Carlos J. Avila, C., 341 Montgomery St.,

Douglas 709. Siam-H. G. W. Dinkelspiel, C., 412 Chronicle Bldg.,

Kearny-367. Spain-Arthur Bland, A. C., 817 Pacific Bldg., Douglas



The Downtown District

Sweden-Dr. Fredrik Westerberg, A. C., 268 Market St., Sutter 5288

Switzerland-J. Freuler, C., 440 Montgomery St., Kearny

Uruguay-O. M. Goldaracena, C., Bank of Italy Bldg., Douglas 4392.

Venezuela-Hon. C. Wm. Fisher, 112 Market St., Garfield 905.

#### Customs District of the Port of San Francisco

The Customs District of the Port of San Francisco comprises all that portion of the State of California north of the counties of Santa Barbara, with the exception of Humboldt and Del Norte, which form the Customs District of Function trict of Eureka.

The principal officers of the Customs Service at San

Francisco are as follows:

Justus S. Wardell, collector of port; William B. Hamilton, special deputy collector; John S. Irby, surveyor of port; John P. Stone, special deputy surveyor; Jas. H Barry, naval officer; E. W. Maslin, deputy naval officer; Ed. E. Leake, appraiser; E. J. Lindquist, chief boarding officer.

The ordinary entrance fees for vessels arriving from foreign ports with cargo are \$5.70 for foreign vessels and \$2.70 for American vessels.

The ordinary clearance fees for vessels going to foreign ports, either American or foreign vessels, are \$2.70.
Foreign vessels entering from a domestic port are charged a fee of \$2; likewise a fee of \$2 for clearing to a domestic port.

#### United States Government Offices

Aid for Information, 12th Naval Dist., 461 MarketSutter Army Transport Service, Laguna Street	6420
Docks	921
BldgSutter	7379
Branch Office of Naval Intelligence, Balboa Bldg	1702
tion and Animal Quarantine Office, Custom House	1948
tion Laboratory Appraisers BldgSutter	4817
Bureau of Foreign and Domestic Com- merce, Custom HouseSutter	1425
Coast Guard, Custom House— Commanding Office, Southern DivisionDouglas Division Engnr., Southern DivisionDouglas	3512 3512

Purchasing Office, Pacific CoastDouglas	3512
Inspector, Thirteenth DistrictKearny	294
Superintendent Thirteenth District Kearny	294
General Store, Appraisers BldgKearny	2956
General Store, Appraisers Bldg	3347
Custom Service, Wash & BatterySutter	5353
Special Agent, Surveyor, Naval OfficerSutter	5354
Collector of CustomsSutter	5355
Marine Dept Sutter	5356 5357
Chief Clerk, Barge Office, Bdwy. DockSutter Pier 44, Pier 34, S. P. ShedsSutter Appraisers, Storekeeper, Appraiser's Of-	5358
Appraisere Storekeener Appraiser's Of-	3336
tice Engineer Stiffer	5359
Inspector, Santa Fe Freight Shed Park	1806
Inspector, Santa Fe Freight ShedPark Inspector Western Sugar RefMission	912
Department of Agriculture Bureau of Crop	710
Estimates, Custom HouseDouglas Department of Agriculture Federal Grain	754
Department of Agriculture Federal Grain	
Supervision, Mer. Exch. BldgSutter	7456
Department of Agriculture Bureau of Mar-	
kets Mkt. News Inspectn., 510 Battery. Sutter Federal Trade Comm. Atty., Examiner in	2107
Federal Trade Comm. Atty., Examiner in	1 400
Charge, Appraisers BldgDouglas Hydrographic Office, Mer. Exch. BldgKearny	1492
Hydrographic Office, Mer. Exch. Bidg Kearny	1633 1743
Immigration Station, Angel IslandSutter	1743
Steamer Angel Island, Pier 5Sutter Branch Immigration Sta., Appress. Bldg. Sutter	3277
Immigration Boarding Sta., Meiggs Wrf.Franklin	8545
Internal Revenue Collector Custom House Sutter	1280
Internal Revenue Collector, Custom House. Sutter Internal Revenue Agent, Custom House Kearny	2054
Interstate Commerce Commission, Division	
of Valuation. Wells Fargo BldgSutter	4468
Lighthouse Depot. Goat Island	3399
Lighthouse Inspector, Custom HouseDouglas	1522
Lighthouse Wharf, Pier 15. Douglas Naval Port Guard, Pier 7. Sutter	4756
Naval Port Guard, Pier 7Sutter	6240
Naval Radio Inspector 41 DrummSutter	1799
If no answer call	3526
Expert Radio Aid Berkeley	3320 669
Arc EngineerSunset	2927
Naval Radio Station Coat Island Garfield	1883
Spark Engineer	544
Naval Radio Station 1776 48th Ave. Sunset	176
Naval Radio Station, 1776 48th AveSunset Post Office, 7th & Mission	301
Ouarantine Station, Angel IslandDouglas	347
Padia Inspector Custom House Stitter	7112
S. F. Harbor Patrol, Pier 39Sutter	6240
Shipping Board Emergency Fleet Corp.,	0700
369 Pine Sutter	3780
S. F. Harbor Patrol, Pier 39. Sutter Shipping Board Emergency Fleet Corp., 369 Pine Sutter Shipping Board Emergency Fleet Corp., Dist. 7 Storehouse, Ft. of 4th. Market Shipping Commissioner, Appraisers Bldg. Kearny Supervising Inspector of Steam Vessels	710
Dist. / Storehouse, Pt. of 4th	718 840
Snipping Commissioner, Appraisers Bldg. Rearny	040
Supervising Inspector of Steam Vessels, Custom House	1124
War Trade Board, Custom HouseDouglas	1124 2337
Weather Bureau, Mer. Exch. BldgKearny	2337 640
	•
Government Maritime Offices in San Francisc	0

# (United States Custom House)

U. S. Custodian Service, Rm. 318, John O. Davis, custodian.

Immigration Service, Rm. 108, W. E. Walsh, inspector. Coast & Geodetic Survey, Rm. 309, Capt. E. F. Dickens, inspector.

Bureau of Foreign & Domestic Commerce, Rm. 306, E. G.

Babbitt, commercial agent.

Lighthouse Service, Rm. 424, Capt. H. W. Rhodes, inspector.

Radio Inspector, Rm. 526, Bernard H. Linden, inspector. Commissioner of Immigration, Rm. 109, Edward White, commissioner.

#### Customs Service, Room 317

John O. Davis, collector. W. B. Hamilton, special deputy. N. S. Farley, deputy 1st Div. C. L. Brown, deputy 2nd Div. L. Osborne, cashier in charge 3rd Div. Clem G. Perkins, auditor in charge 4th Div. R. H. Wilcox, act. deputy, 5th Div. E. P. Mattison, chief liquidator, 6th Div.

### Surveyor of Customs, Room 325

Col. John S. Irby, surveyor. John T. Stone, spec. deputy surveyor.

### Naval Officer of Customs, Room 325

James H. Barry, naval officer. E. W. Maslin, deputy naval officer.

## Engineer Office, U. S. Army and California Debrs. Commission, Room 405

Major L. H. Rand, corps of engineers. U. S. Army, Rivers and Harbors. Col. W. H. Heuer, corps of engineers.

#### Coast Guard, Room 416

W. E. Reynolds, senior captain, southern division. H. N. Butler, captain of engineers. Lieut. P. W. Lauriat, purchasing officer. L. L. Bennett, aide of commanding officer. Otto G. Wellender, supt. of stations.

### Merchants Exchange Building

U. S. Weather Bureau, Edward A. Beals, district fore-caster.

### U. S. Appraiser's Stores Building

U. S. Marine Hospital Service, Rm. 3, Dr. Robert A. Sherwood, physician.

Shipping Commissioner, Rm. 11, Walter Macarthur, commissioner.

Appraiser of Merchandise for Customs, Rm. 49, E. E. Leake, appraiser.

# U. S. Bonded Draymen

Overland Freight & Transfer Co. This company has contract for all general order goods, and for hauling all packages to appraiser's stores, and to haul all bonded merchandise; subject, however, in the latter instance, to the right of importer to give bond to collector and designate his own drayman.

### Exporters and Importers

American Asiatic Trading Co., 444 Market St. American Import Co., 16 First.
American Trading Co., 244 California.
Atkins, Kroll & Co., 311 California.
Baruch & Co., 1216 Merchants Exchange.
Boyes & Co., P. R., 214 Front.
McCormick & Co., C. R.
California Dried Fruit Trading Co., 112 Market.
Castle Bros., 106 Pine.
Cowen-Heinberg Co., 24 California.
Davies & Fehon, 405 Marine Bldg.
Dill-Crosset Co., Postal Telegraph Bldg.
Gray, Henry & Co., 817 Sansome.
Hamberger-Polhemus Co., 149 California.
Hellmann Bros. & Co., 311 California.
Hellmann Bros. & Co., 311 California.
Havre, J. B., 1023 Kohl Bldg.
Him Sing Chong Co., 1001 Grant Ave.
Hind, Rolph & Co., 230 California St.
James-Force Co., 24 California.
Jones, S. L., & Co., 209 California.
Kai, O., & Co., 512 Grant Ave.
Llata, Lowenberg & Schlegel, Inc.
Lastreto & Co., 260 California.
Macondray & Co., 149 California.
Macondray & Co., 149 California
McCormick, C. R. & Co.
Mitsui & Co., Merchants Exchange Bldg.
Mohns Commercial Company, 260 California.
Moore, Geo. A & Co., 212 California St.
North American Mercantile Co., 318 Front.
Nozaki Bros., 112 Market St.
Okada & Ichida Co., 323 Clay.
Pacific Trading Co., G. Sugihara, President, 331 Battery St.
Peabody, Henry W. & Co., 255 California.
Pacific States Export & Import Co., 626 Santa Marina

Bldg.
Shun Yuen Hing Co., 849 Grant Ave.
Simmons, Thomas W., & Co.

Solomon, C., Jr., 409 Battery Spunt & Rosenfeld, L. Blum, 1469 Stockton. Tetzen, Ch. & Co., Inc., 645 Battery. Thannhauser & Co., 149 California. Ward, Louis A., Vice Pres. American Trading Co., 244 California. Western Import Co., 112 Market. Willits & Co., Inc., 1 Drumm.

#### **Importers**

American Mercantile Co., 510 Battery.
Blood, Harry E., Representative Paris, Allen & Co.,
N. Y., Easton, Cal.
Charles E. Hale Co., The, 10 California.
Ireland, B. C., 24 California.
Jacobs, F. P. & Bros., 114 Sansome.
Landsberger, Julius A., 1001 22d Ave., East Oakland,
Cal.
Lang & Stroh, 209 Drumm.
Lubacs, Eugene, 45 Kearny.
Sherwood & Sherwood, 47 Beale.
Siegfried, John C., & Co., 268 Market.
Wieland Bros., Inc., 309 Davis.
Willard & Co., Leon, 833 Market.
Woll, Chas. J., 770 Mission.

# Steamship Lines Plying Between San Francisco and Foreign Ports with Their Ports of Call

#### Domestic

Albers Milling Co.: Puget Sound ports. Freight.
Albion Lumber Co.: Hobart Bldg. Mendocino Coast ports. Freight.

American-Hawaiian S. S. Co. (William Dimond & Co., Agts.): New York, Charleston, Norfolk, Boston via Panama Canal.

Arrow Line: Coos Bay. Freight.

Atlantic-Pacific S. S. Co. (W. R. Grace & Co.): Charleston and New York, via Panama Canal. Occasionally stops at Norfolk. Freight.



A Modern All Glass Front Building

Bowes & Andrews: Grays Harbor, Columbia River ports, San Pedro and San Diego. Freight only.

Buehner Lumber Co.: Coos Bay. Freight.
C. & O. Lumber Co.: 112 Market St. Brooking,

Oregon. Freight.

Caspar Lumber Co.: Caspar, Calif.

J. O. Davenport: 112 Market St. Puget Sound ports. Freight.

E. J. Dodge Co.: Eureka, Astoria, Portland, Seattle, Tacoma, Redondo, San Pedro, San Diego, Santa Barbara and all Alaska ports. Freight and passengers.

Dollar S. S. Line.

S. S. Freeman Co.: San Diego, San Pedro, Redondo and Southern California ports. Freight only.

Hammond Lumber Co.: Eureka, San Pedro, Astoria and Raymond, Wash. Freight and passengers.

Hart Wood Lumber Co.: San Diego, San Pedro, Grays, Harbor and Willapa Harbor. Freight and passen-

C. M. Higgins: Mendocino, Fort Bragg, Point Arena, San Pedro, San Diego, Redondo. Freight and passengers.

Hobbs Wall & Co.: Crescent City, Calif. Freight and passengers.

Holmes Eureka Lumber Co.: Monadnock Bldg. Eureka, Calif. Freight.

J. H. Huddard & Co.: 110 Market St. Grays Harbor, San Pedro, San Diego. Freight.

E. T. Kruse Co.: Bandon Ore, Freight and pas-

sengers.

F. Linderman: Grays Harbor, Columbia River and Puget Sound ports. Freight only.

Market St. Fureka.

112 Market St. Eureka. Little River Redwood Co.: Freight.

Loop Lumber Co.: All Columbia River and Puget Sound ports—Central Basin. Freight only.

Luckenbach S. S. Co., Inc.: San Francisco and Philadelphia and New York, via Panama Canal. Freight only

Maple Leaf Line (E. C. Evans & Sons): West bound: New York and Savannah, via Panama Canal to San Francisco. Eastbound: Puget Sound and Columbia River ports to San Francisco. Freight only.

Matson Navigation Co.: Honolulu and Hawaiian

ports. Freight and passengers.

C. R. McCormick Co.: San Diego, San Pedro, Grays
Harbor, Columbia River and Puget Sound ports, also ports outside of California. Freight and passengers.

### Pier Use, Size, and Berthing Space

	<del>,</del>					
<b>N</b> 7			<b>D.</b>			<b>D</b>
Name or	Use of Wharf	Size of	Pier .	Adjoining	Total	Berth
Number of Pier		Pier	Area	Area	Area	Space
		1			j	
Section "C"		60x880	52,800	18,000	70,800	880
Fish Wharf	Fish Boats	200x400	23,100	17,000	40,100	1000
Pier No. 41	McCormick	200x1082	196,302	16,000	212,302	1964
Pier No. 39	Unassigned	140x908	129,717	16,000	145,717	1816
Pier No. 37	Spreckels	200x1055	190,812	22,000	212,812	1910
Pier No. 35	Spreckels	200x975	180,196	21,000	201,196	1792
Pier No. 29	China Mail	200x800	161,100	9,000	170,100	1600
Pier No. 27	River Boats	132x611	81,392	13,000	94,392	1222
Pier No. 25	Hind-Rolph	135x600	80,950	12,000	92,950	1192
Pier No. 23	River Boats	100x600	60,000	10,000	70,000	1200
Pier No. 21	Parr-McCormick	107x600	64,200	11,000	75,200	1200
Pier No. 19	River Boats	100x600	60,000	11,000	71,000	1200
Pier No. 17	Gulf Mail	126x800	101,995	10,000	111,995	1600
Pier No. 15	Coal Bunkers	90x794	71,622	10,000	81,622	1588
Pier No. 13		100x800	80,000	10,000	90,000	1600
Pier No. 11	T. K. K	121x798	96,764	11,000	107,764	1596
Pier No. 9	River Boats	133x800	90,349	14,000	104,349	1600
Pier No. 7	Unassigned	132x819	107,657	13,000	120,657	1637
Pier No. 5	River Boats	100x600	60,000	15,000	75,000	1200
Pier No. 1A	River Boats	80x650	52,000	5,000	57,000	1300
Pier No. 1	Monticello	100x311	31,100	J	31,100	311
Pier No. 14	Crowley & U. S	201x651	121,103	8,000	129,103	651
Pier No. 16	Pac. S. S. Co	140x691	96,466	15,000	111,466	1370
Pier No. 18	Pac. S. S. Co	140x691	96,434	11,000	107,434	1370
Pier No. 20	Pac. S. S. Co	111x479	51,811	11,000	62,811	948
Pier No. 22	C. Nelson Co	125x411	50,803	8,000	58,803	813
Pier No. 24	Pac. S. S. Co	127x800	101,580	12,000	113,580	1599
Pier No. 26	Grace & Co	200x771	156,609	15,000	171,609	1529
Pier No. 28	Matson	150x677	101,510	13,000	114,510	1353
Pier No. 30	Matson	200x720	192,799	17,000	209,799	1275
Pier No. 32	U. S. Ship. Board	200x807	158,791	17,000	175,791	1362
Pier No. 34	W. Pacific Ry	130x652	83,610	14,000	97,610	1287
Pier No. 36	T. K. K	201x718	115,644	15,000	130,644	1339
Pier No. 38	Pacific Mail	147x666	98,740	13,000	111,740	1306
Pier No. 40	S. F. & P	150x650	97,638	13,000	110,638	1300
Piers Nos. 42 and 44	Pac. Mail (each)	144x650	187,573	30,000	217,573	2592
Pier No. 46	Unassigned	203x803	164,744	9,600	174,344	1686
Berry Street	Pope & Talbot	90x777	54,000	[	54,000	1121
Third Street	Tugs, etc	150x600	90,000		90,000	1198
Channel Street	Lumber, etc		1	440.000		3000
China Basin	Santa Fe	∫70x560 \	100,000	119,900	219,900	1820
Diam Nr. 54	6 . B	\50x1260\	1 444 640	27.000	454.000	1500
Pier No. 54	Santa Fe	150x770	114,640	37,260	151,900	1522
Central Basin	Lumber	Irregular	180,000	326,000	506,000	1846
Army Street	Union Lumber Co	75x1615	121,125	52,166	173,291	1615
Seawall Lots (27)						
Coal Hoppers			<u> </u>	1		

Chas. Nelson Co.: Seattle, Tacoma, Everett, Pcrt Angeles, Eureka and Arcata. Freight and passengers.
Oceanic S. S. Co. (J. D. Spreckles & Bros.): Honolulu.
Olive J. Olson S. S. Co.: All vessels on Atlantic.
Pacific Mail & Timber Co.: Coos Bay, Pass-Mdse.

First National Bank Bldg.

Pacific S. S. Co.: 112 Market St. Seattle, Tacoma,
Bellingham, Everett, Port Townsend, San Pedro, San
Diego and Alaska ports. Freight and passenger service.

Parr-McCormick S. S. Co.: Fife Bldg., 8th floor.

Coast ports Rolph Navigation & Coal Co.: Owners of American ships Annie M. Reed, Golden Gate, Celtic, Monarch, Golden State, Golden Shore, Encore, Edward May, St. James. Own and operate only coal bunkers on San Francisco water front, capacity 6000 tons. In addition own barges Invincible, Isaac Reed, Chas. B. Kenney, Alden Besse, and Electra, used exclusively for bunkering of steamers in San Francisco Bay. Coal supplied with utmost dispatch. Owners of ocean-going tug-boats Dreadnaught, Undaunted and Relief. First two are most modern and most powerful tugs of their size in the world.

The San Francisco & Portland Steamship Co.: Freight

and passengers. Sailings from Pier 40 every sixth day for Astoria and Portland, Ore., and Los Angeles, Cal.

Coos Bay Lumber Co.: Coos Bay, Oregon. Freight

and passengers.
Sudden & Christensen: San Diego, San Pedro, Grays
Harbor, Columbia River and Puget Sound ports. All
California and Oregon ports. Freight and passengers.
Union Lumber Co.: Fort Bragg, Calif. Freight and

Williams Dimond & Co.: 310 Sansome St. Atlantic Coast ports and Cuba.

Foreign American Asiatic Co.: Local address, Alaska Coml. Blgd. Regular service between San Francisco and Vladivostok and points in Japan and China. Freight only.

Atkins-Kroll & Co.: Local address: 311 California

Australian ports.

Bank Line Trading & Transportation Co.: Local address, American Nat. Bank Bldg. Hongkong and Asiatic ports.

Burns-Philp Co.: Local address, Merchants Exchange Bldg. Australian ports.

W. J. Byrnes & Co.: Local address, 405 Washington St. S. S. Fukui Maru, Yokohama and Kobe.

China Mail S. S. Co.: Local address, 416 Montgomery

St. San Francisco and Oriental ports.

Cunard S. S. Co.: Local address, 501 Market St.

Dollar S. S. Line (Robert Dollar Co.): Vancouver.

Freight only. East Asiatic Co., Ltd. (Pacific Line) (Otto Jelstrup, Agt.): Westbound: Copenhagen, Gottenberg, Christiana, Antwerp, London and Genoa to San Francisco via Panama Canal. Eastbound: San Francisco to Christiana, Gottenberg, Christiana, Christiana, Gottenberg, Christiana, Gottenberg, Christiana, Gottenberg, Christiana, Christiana, Gottenberg, C berg and Copenhagen. Japan and Vladivostok. Orient: San Francisco to China,

Gulf Mail S. S. Co.: Local address, Mr. Smith, Agt. San Francisco to West Coast of Mexico, including Mazatlan, Santa Rosalia, Guaymos, etc.
Gulf & Pacific Navigation Co.: Local address, A new

line. Will own and operate boats connected with the Gulf Mail S. S. Co. H. W. Deas, H. H. K. Smith and

N. Bartning, incorporators.

Harrison Direct Line (Balfour Guthrie & Co., Agts.): San Francisco to London and Liverpool, via Panama Canal.

Freight only.

International Shipping Co.: Local address, 16 California St. Marine agents Java, Macassar, Celivi Islands; Manila and Hongkong.

Java-China-Japan Line (J. D. Spreckels & Bros Co.): San Francisco and Netherlands East Indies, via Hong-

kong and Manila.

Maple Leaf Line (E. C. Evans & Sons, Agts.): Westbound: New York and Savannah, Colon, Buenaventura, Corinta. Las Union, Guaymos, Mazatlan, Prince Rupert, Port Mann, Victoria and Vancouver to San Francisco, via Panama Canal. Eastbound: San Francisco and Santa Rosalia, Avonmouth, Swansea, Dunkirk, via Panama Canal. nal. Freight only.

# Pan-American Line

Steamship Agents



Operating a regular line of steamers from San Francisco Mexico Central and South American ports

310 SANSOME STREET SAN FRANCISCO CALIFORNIA

Cable Address: "Panamerica"

Merchants' Line, (North Pacific Division): (W. R. Grace & Co., Agts.). San Francisco to Manzanillo, Sal-Grace & Co., Agts.). San Francisco to Manzannio, Salina Cruz, Champerico, San Jose de Guatemala, Acajutla, La Union, Punta Arenas, Balboa, Buenaventura, Paito, Callao, Wollendo, Arica, Iquique, Toctilla, Antofagasta. Taltal, Coquimbo, and Valparaiso. Freight and passen-

Nitre S. S. Co. (E. C. Evans & Sons, Agts.): Seattle, Portland and San Francisco to Glasgow and Avonmouth. Norway-Pacific Line: Local address, American Nat.

Bank Bldg.

Oceanic S. S. Co. Oceanic S. S. Co. (J. D. Spreckels & Bros. Co., Agts.): Sydney Short Line (three weekly sailings) direct route between San Francisco, Hawaii, Samoa and Australia. Freight and passengers.

Osaka Shosen Kaisha: Local address, 625 Market St.

H. Yamonai, manager.

Pacific S. S. Co.: San Francisco and Victoria and Vancouver. Freight and passengers.

Pacific Islands Line (Atkins & Kroll, Agts.): Guam

and Manila, and all Pacific Islands.

Pacific Mail S. S. Co. (Coast-wise service to Mexico and Central America.): San Francisco and Mazatlan, San Blas, Manzanillo, Acapulco, Salina Cruz, Ocos, Champerico, San Jose de Guatemala, Acajutla, La Libertad, La Union, Amapala, Corinto, San Juan del Sur, Punta Arenas and Balboa. Freight and passengers. Mancho, Hongkong, Calcutta, Singapore, Colombo. (Trans-Pacific service): Honolulu, Yokohama, Kobe, Shanghai, Hongkong, and Manila. (Manila-East India service): Manila, Saigon,

Singapore, Calcutta, and Colombo.

Pacific Sunset Line: Local address, Fair & Moran
Fife Bldg., 683 Market St. S. S. Costa Rica for Mexican and Central American ports via Los Angeles. Passengers and freight.

C. Henry Smith, Inc.: Local address, 311 California t. Guayaquil, Callao, Arica, Antofagasta, Valparaiso. Freight and combustibles.

J. D. Spreckels Bros. Co.: Local address, 60 California St., Yokohama, Kobe, Nagasaki, Hongkong, Singapore, Batavia, Semarang, Soerabaia and Manila.

Struthers & Dixon, Agents: Local address, 244 California St. Yokohama and Kobe, Dairen and Shanghai.

Freight and combustibles.

Toyo Kisen Kaisha: Local address, entire 3rd, 4th, and 5th floors, 625 Market St., San Francisco and Honolulu to Yokohama, Kobe and Nagasaki. Freight and passengers.

Trans-Oceanic Co.: Local address, Alaska Coml. Co.

Bldg. Yokohama and Kobe.
Union S. S. Co. of New Zealand, Ltd.: San Francisco to Papeete, Tahiti, Rarotonga, Cook Islands; Wellington, New Zealand (connecting with Union S. S. Co. local steamers for all New Zealand coast ports); Sydney, Austerney tralia (connecting with Interstate Coastal steamers for all Australian ports and Tasmania).

U. S. Army Transports: San Francisco and Guam. Nagasaki and Manila.

Weir S. S. Co.: Local address, American Nat. Bank Bldg. Capt. Kennedy. Tramp ships. Wilson Bros. Co.: Hoquiam and Aberdeen. Freight

and passengers.

E. K. Wood Lumber Co.: Bellingham, Hoquiam, Portland, San Pedro and Columbia River ports. Freight and passengers.

## SAN JOSE DE GUATEMALA Guatemala

Position: Latitude 14 degrees north, longitude 90 degrees 53 minutes west.

Population: 3,000. Imports: Lumber, flour, potatoes, tallow, canned goods, cotton goods, hardware, woollens, machinery,

Exports: Coffee, hides, sugar, deer-skins, indiarubber, etc.

Accommodation: It is an open roadstead, ships lying about 1/2 mile from the shore. The bottom is of hard sand, not very good holding ground. During the months of June, July, August, September and October

this port is visited by violent wind storms, called "Chubascos" generally from the southeast, and ac-"Chubascos" generally from the southeast, and accompanied by rain; these usually occur in the evening and come on with slight warning. It is always advisable for ships to be prepared for these occurrences. There is an iron wharf extending 900 feet from the shore, where all cargo is embarked or disembarked by means of lighters to and from the ships. The working capacity of the port is 400 to 500 tons per day. There are no lights. Vessels of any size can call here. Anchorage no lights. Vessels of any size can call here. Anchorage is in 10 to 14 fathoms of water. An artesian well supplies good water in abundance. Flour, meat, canned goods, and some vegetables may be obtained at this port, but it is necessary to make arrangements in advance. There is a native doctor. A good hospital and excellent doctor are to be had in Guatemala City. San Jose is connected with Guatemala City by the Central Railroad. A railway line was finished in January, 1908, between Guatemala City and Puerto Barrios on the Atlantic coast, so that there is now a line of rails across the Republic from San Jose on the Pacific to Puerto Barrios on the Atlantic. The port as a rule is fairly healthy.

Port Charges: Ballast, \$2.50 gold per ton, alongside. Labor, afloat, \$36 per lighter per trip, overtime double. Bill of Health, foreign ships to American ports, \$5 gold. American ships, free of charge. For supplementary bills of health all payments are made in paper. Wharfage dues, Steamers, \$25, currency. Agency fee, steamers, \$128 currency. Water, about 1c per gallon.

# SAN JUAN DEL SUR Nicaragua

Position: Latitude 11 degrees 11 minutes north, longitude 85 degrees 48 minutes west.

Population: 3,000.

Accommodation: The harbor can be entered by the largest vessels, and is considered safe, except from September to May. There is a lighthouse on the top of a hill on the right of the entrance to the harbor, visible for about 3 miles. The anchorage is near three buoys marked "Cable".

Pilotage: \$1.50 per foot. Port Charges: Lighterage, \$1 per ton. Port dues, Merchant vessels, 10c per ton. Fresh water, scarce

during the summer season, and bad in quality.

Provision: High. There is a duty of 5 per cent net on the invoice value of all merchandise imported for consumption.

# **SARAWAK British North Borneo**

Position: Latitude 1 degree 33 minutes north, longitude 110 degrees 20 minutes east.

Population: 600,000.

375,000.

Pilotage: \$1.00 per foot.
Port Charges: No harbor dues. Light dues, 3c per ton.
Accommodation: Depth at low water in channel, 3
fathoms. Spring rise 18 feet. Neap rise 10 feet. There is
deep water for vessels of 1,000 tons alongside wharf. Kuchang possesses several wharves. Coal hulks in river; 15-ton crane; dry dock, can accommodate any vessel coming up river.

Imports: Cloth, brassware, tobacco, salt, opium, crockery-

ware, rice, wines, beer, spirits, tea, ironware, provisions.

Exports: Timber, beeswax, canes, pepper, camphor, fish, sago-flour, gutta percha, diamonds, gold, quicksilver, antimony, india rubber.

# **SEATTLE** Washington

Latitude 47 degrees 36 minutes 18 seconds north, longitude 12 degrees 20 minutes 20 seconds west.

Population estimated by Polk Directory Company,

The value of commerce during the past ten years through the Washington customs district, of which Seattle is headquarters and chief port, shows a total increase of 983.2 per cent. The figures for each year are given below:

Calendar			
Years	Exports	Imports	Total
1909\$	26,518,274	\$ 28,611,494	\$ 55,129,768
1910	32,187,901	23,837,633	56,025,534
1911	48,629,936	35,863,636	84,493,572
1912	67,435,432	47,935,554	115,370,986
1913	63,123,589	51,833,196	114,956,785
1914	47,951,445	62,872,287	110,823,732
1915	89,205,315	88,023,482	117,228,797
	198,747,108	161,779,832	360,526,940
	289,078,275	196,210,883	485,289,158
1918	296,190,778	300,990,136	597,180,914

Seattle is 120 miles from Tatoosh island, commonly called Cape Flattery, the entrance to the Straits of Juan de Fuca. Elliott Bay, the harbor of Seattle, has about 12 miles of shore line, and the city and wharves are grouped about this bay. There is from 20 to 45 fathoms of water for anchorage in the fairway. The shore line is 193 miles, 53 miles of which are on Elliott Bay, and 140 miles along Lake Union, Salmon Bay, Lake Washington, Lake Washington Canal and the Duwamish Waterway. There are 90 miles devoted to commercial purposes,

### Lake Washington Canal

A canal, connecting Puget Sound at Shilshole bay, the north end of the city, with Lake Washington, extending for 10 miles along the eastern side of the city was opened July 4, 1917. The total length of the canal is about 10 miles, and gives Seattle two fresh water harbors in Lakes Union and Washington with a total shore area of more than 140 miles, and with excellent frontage available for shipping and industrial development. Two parallel locks give entrance to the canal from Shilshole bay. The larger lock is 825 feet long between gates, 80 feet in width, and with maximum draft of 36 feet. The smaller lock, designed for small craft, is 150 feet in length, with maximum draft of 16 feet. With the exception of the gates in the Panama canal, these are the largest ever built by the United States.

#### Pilotage

Pilotage on Puget Sound is not compulsory, nor is there any definite cruising grounds for pilots. A licensed pilot, however, meets ships at Port Townsend or Port Angeles, in the Straits of Juan de Fuca, according to contract, and a competent pilot may be secured at any port on Puget Sound on short notice. All foreign steamship companies making regular sailings employ their own pilots. There are no rocks or other obstructions to navigation in the fairway.



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Section of Newer Seattle Business District

Aids to Shipmasters

Aids to Shipmasters

Shipmasters entering the Port of Seattle are notified that the Port Warden's office, located on Pier 1, foot of Yesler Way, maintains a wireless station, which is at the disposal of shipmasters at any time between 8:00 a. m. and 5:00 p. m. Masters are particularly requested to make use of this station when entering the Sound, for securing wharfage, making arrangements for coaling, victuals, berthing, or for any other purpose. There are no charges whatever for this service, and the Port Warden will transact such business as does not conflict with ordinances. The signal call is KPE. Telephone Main 6000. 6000

#### Harbor Protection

Seattle harbor is efficiently protected at all hours of the day and night by police patrol under the direction of the Port Warden. The police launch maintains wireless apparatus, fire fighting apparatus and lifesaving devices. In cases of necessity, call Main 6000.

The harbor department of the City of Seattle, under control of the port warden, furnishes free of charge on application to those interested, a map of the central waterfront district, showing the lengths of piers, depth of water, distance between piers and location of spur tracks on piers. Also a copy of the harbor ordinances.

A graphic tide chart showing the tides at Seattle for

the ensuing year.

A list of life saving appliances for free use in case

of emergency.

Seven buoys are maintained by the harbor department for the benefit of commerce. A very nominal charge is maintained to prevent abuse.

The city maintains two large fire tugs in the central district which will respond to calls for assistance of vessels in distress in waters over which the city of Seattle has iurisdiction.

#### Cost of Fuel

Soft coal, suitable for ocean-going vessels, is cheaper

Soft coal, suitable for ocean-going vessels, is cheaper at Seattle than at any other port on the Pacific Coast. The average price at Seattle during 1918 for steaming coal was \$6.25 per ton.

Fuel oil costs the same at Portland and Seattle, and is 5 cents per barrel higher at Vancouver, B. C. At San Francisco it is 15 cents per barrel lower. The average price for 1914 was 90 cents per barrel. The average price in January, 1915, was 80 cents per barrel.

Survey of Terminal Facilities

	Survey of Terminal Facilities	
	Average depth of water at low tide, feet Spur tracks, capacity in cars:	33
	(a) Shipside	500
	(b) Landside	2,000
3.	Mechanical handling equipment:	-,
	Kind	Modern
	Lifting capacity, tons	
4.	Wharf dimensions:	•
	(a) Covered shed area:	
	1. Square feet	2,500,000
	2. Cubic feet	9,000,000
	3. Average floor load capacity, sq. ft.	600
	(b) Outside area:	
	1. Square feet	1,000,000
_	2. Average floor load capacity, sq. ft.	500
5.	Storage capacity (in tons) for merchandise:	
	1. Wharf shed	250,000
	2. Warehouse	250,000
_	3. Open space	200,000
6.	Storage capacity (in cars) of steel and heavy	
	machinery:	
	1. Wharf 2. Open space	3,000
`_	2. Open space	1,873
7.	Waterside cold storage capacity in tons	35,000
8.	Waterside fuel facilities:	
	(a) Coal:	
	1. Storage capacity in cars	12,000
	2. Delivering cap'ty in tons per hour	10,000
	(b) Oil:	
	1 Storage capacity in gallons	
	2. Delivering cap'ty in gals, per hour	1.000.000

9. Waterside grain storage:	
(a) Capacity in tons(b) Delivering capacity in tons:	100,000
1. Bulk grain	3,000 17,500
2. Sacked grain	50,000
11. Number of 400-foot vessels which can be simultaneously accommodated loading or	50,000
discharging	80
12. Number of tons which can be loaded on such vessels per 24 hours under normal conditions:	
(a) General merchandise	60,000
(b) Steel and heavy machinery	50,000
(c) Lumber, feet board measure	6,500,000

#### Wharves and Warehouses

(a) Bulk .....

(b) Sacked ......

10,000

48,000

Commercial Wharves.

(Note: These wharves are listed in their order from south to north.)

Frank Waterhouse & Company has acquired considerable water front property in the west entrance of west waterway and plans construction of large terminals for

waterway and plans construction of large terminals for oversea shipments.

East Waterway Dock & Warehouse Co.: Location West Hanford St. and Kitsap Ave. Operators, Rogers Brown & Co. Width 112 feet, length 600 feet. Capacity 10,000 tons. Warehouse width 100 feet, length 600 feet. Capacity 8,000 tons. Oil tanks for 1,000,000 gallons. Berthing space 800 feet; depth of water at low tide 30 feet. Cost of construction \$300,000.

Hanford Street Wharf: Foot of Hanford St. Owned and operated by Port of Seattle. 1,500 feet long, 1,000 on south side, and 479 feet on East Waterway, by 120 feet wide. Storage sheds 90x1,248 feet, of which 780 feet is 2-story, each with 20-foot ceiling. Frame and sheet iron construction with automatic sprinkler system. Goods handled to second floor by electric elevator conveyor. handled to second floor by electric elevator conveyor. Joint trackage by all railroads to three tracks on wharf. Concrete grain elevator adjacent with capacity of 500,000 bushels. Delivers sacked grain into second story of sheds,

bushels. Delivers sacked grain into second story of sheds, and bulk grain by conveyor direct to vessels, loading two hatches at once at any point along 780-foot conveyor.

C. M. & St. P. Ry. Wharf (Ocean and Sound dock): Foot Lander St. Owned and operated by Chicago, Milwaukee & St. Paul Ry. 550x145 feet, with dock house and bonded shed 115x500 feet. 13,133 tons capacity. Served by two tracks with joint switching privileges by all railroads. Berthing space of 550 feet. Depth of water 30 feet at low tide. 200-foot gridiron adjacent for use by tug companies. Car ferries for Puget Sound points. points.

Stacy Street Wharf: Foot Stacy St. Owned by Port of Seattle; terminals in conjunction with Lander Street wharf 100x814 feet. Shed 90x730 feet. Slip between wharves, and outside. 2,180 feet berthing space. 35 feet of water at low tide. Both sheds, 19,147 tons capacity.

Lander Street Wharf: Foot Lander St. Owned by Port of Seattle. Transit shed 90x750 feet. Depressed tracks on both wharves connecting with joint tracks used.

tracks on both wharves connecting with joint tracks used

by all railroads.
Pacific Coast Ry. Track Wharf: Foot Connecticut St. 750 feet berthing space for carload freight. 25-50 feet of water at low tide.

Union Pacific Dock: Location foot of King St. Width 208 feet, length 575 feet; capacity 10,000 tons. Warehouse 523x160 feet, 10,000 tons capacity. Berthing space for two 400-foot boats, depth of water at low tide, 30 feet. Cost of construction, \$300,000.

Pier D: Near foot King St. Owned by Pacific Coast Co. Operated by Pacific S. S. Co. 1,300 feet berthing space. Freight and passenger warehouse, 12,000 tons capacity. Thirty feet water at low tide.

Pier C: Foot Jackson St. Owned by Eyres & Seattle Drawage Co. 805 feet berthing space. Freight and passenger warehouse and passenger control of the paragraphy of the perhaps space.

Pier C: Foot Jackson St. Owned by Eyres & Seattle Drayage Co. 805 feet berthing space. Freight and passenger warehouse. 6,000 tons capacity. 30 feet water at low tide.

Pier B: Foot of Washington St. Owned by Pacific Coast Co. Operated by Pacific S. S. Co. 924 feet berthing space. Freight and passenger warehouse, 6,000 tons capacity. Thirty feet water at low tide.

Pier A: Near foot Washington St. Owned by Pacific Coast Co. General freight wharf. 886 feet berthing space. Storage warehouse, 5,000 tons capacity. 30 feet water

at low tide.

Pier 1: Foot Yesler Way. Owned by Northern Pacific Ry. Operated by Canadian Pacific S. S. Co. 840x120 feet. Warehouse 840x100. Capacity 20,000 tons. Track capacity 20 cars. Adjustable slips. Modern waiting rooms and offices. Headquarters of port warden, whose wireless call is KPE. One of most modern wharves

whose wheless can is KFE. One of most modern whatves in city. 40 feet water at low ide.

Pier 2: Foot Yesler Way. Owned by Northern Pacific Ry. Operated by Alaska S. S. Co. 770x120 feet with 1,400 feet berthing space. Warehouse 750x100 feet. Capacity 17,000 tons. Track capacity 18 cars. Adjustable

Capacity 17,000 tons. Track capacity 18 cars. Adjustable slips. Electric crane, capacity 25 tons.

Colman Dock: Foot Columbia St. Owned and operated by Colman Dock Co., B. F. Morgan, Mgr. Terminal of Puget Sound Navigation Co., Navy Yard Route, McDowell S. S. Co., and several Puget Sound lines. 700x115 feet. 1,400 feet berthing space. Overhead walk leads from business district to waiting room, from which most of Sound passenger traffic originates. Adjustable passenger gangplanks. Adjustable freight slips. Barlow marine elevator. Has accommodations for 14 Sound steamers at one time. Offices on north side of overhead walk.

Grand Trunk Dock: Foot Madison St. Owned and operated by Grand Trunk Pacific Co. Terminals of Pacific S. S. Co. and Grand Trunk Pacific. New dock 605x116 feet. 1,200 feet berthing space. 12,000 tons capacity. Storage room on second floor served by elevator, 400 tons capacity. No obstructions on wharf, being open construction, semi-fireproof. Adjustable passenger slips. Depressed freight tracks. Offices and waiting-room at street end. One of the most modern docks of latest type construction and capable of handling immense business. Overhead bridge to business district. Depth of water 55 feet.

Pier 3 (Galbraith Dock): Foot of Spring St. Owned by Northern Pacific Ry. Operated by Galbraith, Bacon & Co. Terminal for Island Transportation Co., Merchants Transportation Co., Puget Sound Naval Station Route, Kitsap County Transportation Co., and other local lines. Hay, grain and general freight wharf. 300x150 feet. Capacity 10,000 tons. Two spur tracks. Depth of water, 25-40 feet. Warehouse 284x130 feet.

Pier 4: Foot Seneca St. Owned by Northern Pacific Ry. Operated by Dodwell Dock & Warehouse Co. Terminus of fleet of Border Line Transportation Co. 325x100 feet. Warehouse 300x80 feet, capacity 8,000 tons; 40 feet water at low tide; 750 feet berthing space.

Pier 5 (Arlington Dock): Foot University St. Owned by Northern Pacific Ry. Operated by Arlington Dock Co. Terminal of Royal Mail Steam Packet Co. 350x140 feet. Two-story warehouse 336x100 feet. Capacity 20,000 tons. 800 feet berthing space. 40 feet water at low tide.

Pier 6: Foot University St. Owned and operated by C. M. & St. P. Ry. Terminal of Osaka Shosen Kaisha. 460x160 feet. 200 feet berthing space. Warehouse 459x 120 feet. 11,000 tons capacity. 40 feet water at low tide. Used exclusively for handling Oriental freight.

Pier 7 (Schwabacher Dock): Foot Union St. Owned and operated by Schwabacher Dock & Warehouse Co. Terminal Humboldt S. S. Co. 964 feet berthing space. Warehouse 5,440 tons capacity. 40 feet water at low tide.

Pier 8: Foot Union St. Pacific Net & Twine Co. 1,226 feet berthing space. Net and ship chandlery ware-house. 7,810 tons capacity. Headquarters for fishing fleet. 40 feet water at low tide.

Piers 9 and 10 (Virginia Street Docks): Foot Virginia St. Owned by Gaffney Estate. Operated by Virginia Street Dock & Warehouse Co. Terminal for W. R. Grace & Co., Chas. Nelson Co., Matson Navigation Co., Northwestern Fisheries Co. 350x290 feet. Two warehouses, 14,000 tons capacity. Two depressed tracks and one high line track. Connected by electric conveyor with brick

warehouses across Railroad Ave., with 12,000 tons dead

weight capacity.

Pier 11: Foot Virginia St. Owned by Pacific Coast
Co. 550 feet berthing space. Warehouse 7,000 tons
capacity. 40 feet water at low tide.

Pier 11B (Quartermasters' Dock): Foot Lenora St.
Operated by the United States Quartermasters' Department

for use of government traffic.

Bell Street Wharf: Foot of Bell St. Owned and operated by Port of Seattle. Quay wharf 1,200 feet frontage. Two-story warehouse, 70x950 feet. 14,000 tons capacity. Motor boat harbor in rear of wharf. 40 feet water at low tide. Specially constructed for coastwise traffic. Passenger waiting rooms. Overhead bridge connects with business district. Three combination elevators and slips. business district. Depressed tracks.

Pier 12: Foot Wall St. Owned and operated by Galbraith, Bacon & Co. 500x100 feet. Warehouse 12,000 tons capacity. 30 feet water at low tide. Used as hay and grain warehouse and shipping wharf by owners.

feet berthing space.

Pier 14: Foot of Broad St. Ainsworth & Dunn, owners. Operated by Dodwell Dock & Warehouse Co. Ltd. Terminal Border Line Transportation Co., Blue Funnel Line, 550 feet long. Berthing space 1,060 feet. Served by depressed and surface tracks. Two-story warehouse, 10,800 tons capacity. 30 feet water at low tide. Barlow marine elevators, folding platforms and electric conveyor to second floor of warehouse.

Smith's Cove Wharf: Owned and operated by Great Northern Ry. At Smith's Cove. Wharf 1,600 feet berthingspace on one side. Warehouse for general freight. 30,050 tons capacity. 38 feet water at low tide. Terminal of Nippon Yusen Kaisha.

Smith's Cove Wharf: Additional terminals owned by Great Northern Ry. Total length of dock, 1,800, with a dredged slip 120 feet wide at the bottom and to a depth of 35 feet below tide. The improvement on the dock will consist of a warehouse 150x800 and open platform 150x 1000 feet; together with two tracks on the slip side of the dock, six tracks on the opposite side. The construction will consist partly of heavy riprapped fill and partly of creosoted piling. The estimated cost is \$750,000.

Smith's Cove Elevator & Dock: Owned and operated by Great Northern Ry. At Smith's Cove. Wharf 700 feet straight berthing space. Grain and oil warehouse and elevator with all modern appliances for loading and unloading cargoes. 17,800 tons capacity of warehouse. 28

feet water at low tide.

Smith's Cove Wharf: Foot Eighteenth Ave. W. Owned and operated by Port of Seattle. Largest wharf in Northwest. 2,580 feet by 310 feet. Center of wharf filled ground. Four railroad tracks, all depressed in center, and outside tracks. U-shaped warehouse at south end of wharf, each arm 600x97 feet. Portion of wharf open, particularly designed for handling lumber. Traveling gantry crane. Complete fire protection. Shear leg derrick of 100 tons capacity. Steam locomotive crane of 15 tons capacity are part of the equipment. Dredged channel at each side of wharf 120 feet wide. 35 feet water at low tide. Capacity of wharf unlimited in weight, account of construction.

Salmon Bay Wharf: Owned and operated by Port of Seattle. Designed for use of fishermen only. Has all facilities for use of fishing fleet. Wharf 500x300 feet.

(Note: By a recent arrangement, all wharves are connected with all railroads entering Seattle, each wharf having trackage, and this trackage being directly connected with join tracks.)

#### Private Commercial Wharves

(Note: This list of wharves comprises those belonging to industries located among the commercial wharves of the port, and which are made use of by steamers in loading cargoes direct from the industry. They are listed in order from south to north.)

King & Winge: West Seattle. Boat slip and repair

Novelty Mill Co.: Alki Ave, Wharf. 100 feet berthing space. Flour mill and warehouse. 19 feet water at low tide.

West Seattle Elevator: Alki Ave. 460 feet berthing space at wharf. Elevator and storage warehouse for grain. 41 feet water at low tide.

41 feet water at low tide.

Colman Creosoting Works: West Waterway. Timber and pile creosoting plant. 300 feet berthing space at wharf. 30 feet water at low tide.

Schwager & Nettleton Mills: West Waterway. Lumber mills. Wharf 870 feet berthing space. 35 feet water at low tide. Mill has 7,000,000 feet annual capacity. Largest mill adjacent to water at Seattle.

Fisher Flouring Mill: West Waterway. Flour mills and wharf with 400 feet berthing space. 30 feet water at low tide. Storage warehouse for 19,000 tons.

Chas. H. Lilly & Co. Dock: Location, Harbor Island.

Chas. H. Lilly & Co. Dock: Location, Harbor Island. Width of wharf 167 feet, length 125 feet; capacity 500 pounds to square foot. Warehouse 137x115 feet; capacity 500 pounds to square foot. Depth of water at low tide, 30 feet. Cost of construction \$15,000.

Commercial Boiler Works Wharf: Foot Lander St.

Occupied by Commercial Boiler Works, Seattle Machine Works, Westerman Iron Works, etc. 750 feet berthing space. 30 feet water at low tide. Marine repairs of all

descriptions. San Juan Fish Co.: Foot Stacy St. Wharf with 350 feet berthing space. Warehouse for fish storage. 25 feet

water at low tide.

Hammond Milling Co.: Railroad Ave. and Waterway. Flour mills and wharf with 600 feet berthing space.

Mill of 7,000 barrel capacity. 31 feet water at low tide.

Albers Bros. Milling Co.: Foot Massachusetts St.

Flour mill and wharf. 500 feet berthing space. 30 feet water at low tide. Warehouses 50,000 bushels capacity.

Dry Dock: Skinner & Eddy, foot of Atlantic St. Dimensions, 850x85 feet. Capacity, 160,000 tons. Berthing space of 900 feet.

Pioneer Sand & Gravel Co.: Foot Weller St. Sand and gravel bunkers. Wharf with 40 feet berthing space.

Reliable Oyster & Fish Co.: Foot Stewart St. Wharf 330 feet berthing space. 2,200 tons capacity. Fish warehouse. 40 feet water at low tide.

Booth Fisheries Co.: Between Wall and Vine Sts. Wharf. 512 feet berthing space. Fish warehouse. 25 feet water at low tide.

Whiz Fish Dock Co.: 1525 Railroad Ave.

Richmond Beach Sand & Gravel Co.: Foot Wall St. Sand and gravel bunkers. 15 feet water at low tide.

Pioneer Sand & Gravel Co.: Foot Cedar St. Wharf

and slips. 431 feet berthing space.

Seattle Lumber Co.: Foot Mercer St. Lumber wharf, 820 feet berthing space. 30 feet water at low tide.

#### Tariff of Public Wharves

The tariff under which the Port Commission docks are

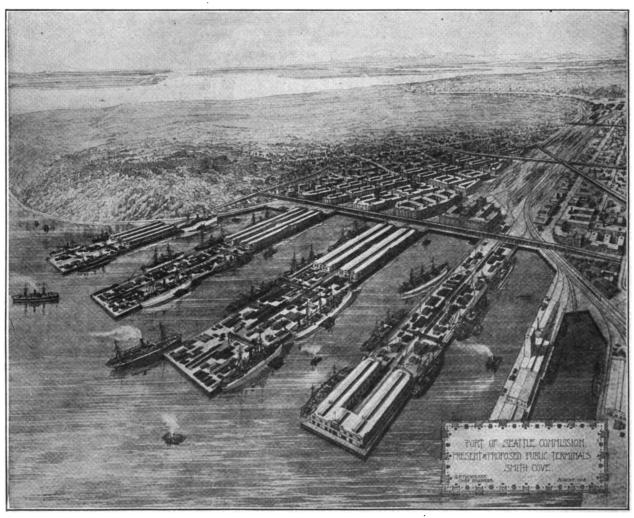
operated is as follows

Dockage Rates: Vessels awaiting cargo—On vessels out of commission or awaiting cargo—151 to 200 gross tons, per day of 24 hours or fraction thereof, \$4.00; 201 gross tons or over, per each additional ton per day or fraction thereof, 34c. Vessels under repair—Vessels under repair shall pay one-half (1/2) regular rates.

Mooring Charges: Vessels 71 feet to 80 feet inc., per

24 hours or fraction thereof, \$1.00; 81 feet and over, on vessel's gross tonnage, per ton, 3c. Minimum not less than

charge applying on vessels 80 feet long.





Present and Present Public Terminals at Smith Cove

### STORAGE FACILITIES—PORT OF SEATTLE

	<del></del>			1		•
	Outside	Net Floor Area		Net Contents		Load Limit
LOCATION OF TERMINAL UNIT	Dimensions	Square	e Feet	Cubic Feet		Lbs.
	in Feet	Each	Total	Each	Total	Sq. Ft.
					-	
Smith Cove—East Shed		40,520		1,154,720		On fill.
Smith Cove—West ShedSmith Cove—End Shed	96x440 160x266	40,520 41,300	•••••	1,154,720 1,177,050		700 lbs.
Shiftii Cove—Biid Shed	100x200	41,500	122 340	1,177,030	2 496 400	
Smith Cove—Open Wharf	59x922)	121,452	122,340 121,452		3,486,490	On wharf, 500 lbs.
Smith Cove—East Side	78x983∫	•	ĺ			
Smith Cove—West SideSmith Cove—West Side		132,784	132,784			ļ
Bell Street Shed—First Floor	70x870	54,050		891,825		500
Bell Street Shed—Second Floor		56,950		1,025,100		250 500
Bell Street, North Wing—First Floor Bell Street, North Wing—Second Floor		6,100 6,970		115,900 104,550		175
			123,970		2,137,375	
Bell Street Warehouse—First Floor	80x300	21,333		386,127		600
Bell Street Warehouse—Second FloorBell Street Warehouse—Third Floor	80x300 80x300	23,112		348,991		600 500
ben Street Warehouse—Third Floor	8000	21,930		250,002	005.120	
Bell Street Cold Storage—First Floor	80x104	4,767	66,375	44,333	985,120	250
Bell Street Cold Storage—Second Floor	80x104	7,298		67,871		250
Bell Street Cold Storage—Third FloorBell Street Cold Storage—Fourth Floor	80x104 80x104	5,048 7,321		46,946		250 250
Bell Street Cold Storage—Fifth Floor	80x104	7,321		68,085		250
			37,768		328,444	
Bell Street—Open Wharf		10,000	10,000		1	500
Stacy Street—ShedStacy Street—Open Wharf	90x754 90x201	65,600 14,180	65,600 14,180	1,836,800	1,836,800	500 500
Lander Street—Shed		63,975	63,975	1,971,300	1,791,300	500
Lander Street—Open Wharf	90x223		20,070			
Whatcom Avenue—Wholesale—First Floor		20,777 22,820		296,072 279,345		500 300
Whatcom Avenue—Wholesale—Third Floor	78x318	22,926		280,843		300
Whatcom Avenue—Wholesale—Fourth Floor	78x318	23,137	·····	279,572	·····	300
Hanford Street—Shed—First Floor	00.000	70.044	89,660	1 212 464	1,136,032	500
Hanford Street—Shed—First Floor		70,944 25,928		1,312,464 544,488		500
Hanford Street—Shed—Second Floor	90x828	74,420	<u></u>	1,265,140		250
	l		171,294		3,122,092	
Hanford Street—Open Storage	1	20,240	4,654	95,400	95,400	500
Hanford Street—On Ground	88x230 100x160	26,000				
			46,240			
Spokane Street—Shed—First Floor	90x882	75,090		1,539,345		500
Spokane Street—Shed—Second Floor	90x882	79,208	154,298	1,108,912	2,648,257	250
Open Storage, on Ground			141,953		2,040,237	
Fruit Storage—First Floor	147x195	17,147		136,018		500 200
Fruit Storage—Second Floor Fruit Storage—Third Floor		26,052 25,231		325,650 316,387		200
Fruit Storage—Fourth Floor	147x195	26,231		327,887		200
Fruit Storage—Fifth Floor Fruit Storage—Sixth Floor	147x195 147x195	26,235 26,300		327,937 328,850		200
Fruit Storage—Seventh Floor	147x195	26,300		341,900		200
<u> </u>		<del></del>	173,523		2,103,629	
Spokane Street—Salmon Warehouse:		#0.40:		1 222 500		1000
First FloorSecond Floor	147x523 147x523	70,400 72,400		1,223,600 1,015,450		250
2000000	141,4020	72,700	·····	-,0.0,100	2,239,050	
Fish Handling Shed	101x109	9,640	9,640	137,765	137,765	400
Fish Storage Shed	121x172	17,207	17,207	220,574	220,574	600 2000
Salmon Bay—Transit Shed	90×100	4,316 8,880	4,316 8,880	208,168 162,797	208,168	500
Salmon Bay—Open Wharf	237x360		76,320			
Salmon Bay—Net Wholesale—First Floor	50x200	6,535 5,976		71,874 62,748		
The Wholesale Second Ploof	50x200	3,970	12,511	- 02,740	134,622	
			,			
		·		<u> </u>		

#### Statistics for the County

Excerpts from Statistical Abstract of the State of Washington for King County, of which Seattle is the chief city.

Population of county in 1910, 284,638; percentage of increase from 1900 to 1910, 158.6. Estimated population,

1915 census, 376,717.

Population per square mile in 1910 was 134.8.

Number of children enrolled in public schools for year ending June 30, 1917, 50,860.

Principal farm crops of the county are wheat, oats, bar-

There were 74,921 pounds of cheese manufactured in the county during 1917, with a value of \$15,962.85.

Thirteen creameries in the county manufactured 3,861,159 pounds of butter in 1917, the value of which was \$1,349,095.21. Of this amount 1,070,140 pounds were prepared for export.

King County is the center for milk condenseries, the bulk of the 1,844,097 cases of canned milk produced in the state during 1917 being manufactured in this county. Of this amount over 1,000,000 cases of canned milk are exported annually.

In 1916, according to the estimate of the state horticulturist, there were bearing fruit trees in the county as follows: Apple, 112,535; pear, 37,200; peach, 10,575; plum and prune, 27,500, and cherry, 38,625.

King is the second largest producer of coal among the counties of the state. The output of mines in this vicinity in 1916 totalled 889,275 short tons. Small quantities of gold, silver and copper are also mined in various parts of

Seattle in 1914 embraced 1,014 manufacturing establishments, engaging a total of 15,761 employes. The aggregate values of these industries was \$61,317,496, with products valued at \$64,475,442. The value added by manufacture was \$26,705,318.

The number of national, state and foreign banks doing business in King county in 1918 was 45, divided as follows: National, 9; state, 32; foreign, 4. The capital stock of these banks during the same period aggregated \$8,890,-200, with \$155,414,163 in deposits of all kinds.

The mean annual precipitation in Seattle has averaged 34.36 inches for the past 24 years. The prevailing winds during an almost equal period are recorded as southwest

#### Coal Bunkers

Pacific Coast Coal Co.: West Seattle. Storage capacity 3,500 tons. Loading at rate of 400 tons per hour by electric conveyor. 41 feet at low tide.

Pacific Coast Coal Co.: Foot Lane St. Bunkers and two wharves. 1,185 feet berthing space. 9,000 tons capacity of bunkers. 25.5 feet water at low tide. Loading 700 tons per hour by electric conveyor.

Wellington Coal Co.: Foot Union St. 330 feet berthing space. 45 feet water at low tide. Coal piers only. Capacity 3,750 tons. Loading by conveyor.

Established 1912 Cable Address: FINCOT

## J. H. Fawkner & Co., Inc. STEAMSHIP AGENTS

Steamship Charterers, Brokers Commission Merchants

220 Grand Trunk Dock and 1401 L. C. Smith Bldg. SEATTLE, U.S.A.

Correspondence Solicited

#### Oil Docks

Standard Oil Co.: Foot Holgate St. Shipping wharf 758 feet berthing space. Storage and tankage capacity of 95,000 barrels of crude oil and 75,000 barrels of refined 33 feet water at low tide. Furnish oil either at wharf or alongside from barge.

Union Oil Co.: Foot Bay St. Wharf 1,035 feet berthing space. Tankage capacity of 110,000 barrels of fuel oil and 35,000 barrels refined oil. 35 feet water at low tide. Furnish oil at wharf or alongside ship by barge.

#### City Wharves and Floats

Harbor Master and Port Warden: Capt. A. A. Paysse. Office Pier 1. Phone Main 6000. Official call signal KPE. Floats: Foot Washington St. foot Harrison St.

Docks: Foot 24th St., Ballard, West Seattle Wharf, 200 feet berthing space.

#### Public Warehouses

Warehouses owned and operated by the Port of Seattle. Whatcom Avenue Warehouse: Four-story reinforced concrete storage warehouse, with every modern fireproofing device. Three electric elevators and two spiral chutes. Lighted throughout by electricity. Foot Stacy and Lander

Bell Street Warehouse: Foot Bell St. Forms portion of Bell St. terminal. Five-story concrete warehouse of most modern design. Cold storage plant. Third story connects with business district by overhead bridge. Offices of Port Commission located in building. Trackage at both sides. Amply fire protected and offering most modern and commodious dry and cold storage facilities.

American Can Co. Dock: Location foot of Clay St. Width 60 feet, length 301 feet; 2-story building constitutes wharf and warehouse, first floor capacity 250 pounds to square foot, second floor, 175 pounds to square foot. Berthing space for two 350-foot ships and one 200-foot ship.

#### Importers and Exporters

Asia Trading Co., 424 Seventh South. American Table Sauce Co., L. C. Smith Bldg. American-Siberian Trading Co., Lyon Bldg. American-Sperian Trading Co., Lyon Bldg.
Azuma Bros., Alaska Bldg.
Asiatic-American Co., Ltd., L. C. Smith Bldg.
Andersen, A. O. & Co., Leary Bldg.
American Brokerage Co., L. C. Smith Bldg.
American-China Trading Co., 1121 Third Ave.
American Manufacturers Export & Import Corp., L. C. American Manufacturers Export & Import Corp., smith Bldg.
American-Oriental Sales Corp., L. C. Smith Bldg.
Balfour, Guthrie & Co., Stuart Bldg.
Brady & Co., L. C. Smith Bldg.
Rogers, Brown & Co., Hoge Bldg.
Baldwin Shipping Co., L. C. Smith Bldg.
Clossett & Devers, 317 Second Ave., South.
Connell Bros., L. C. Smith Bldg.
Cho Ito & Co., L. C. Smith Bldg.
Coulter-Taylor Co., L. C. Smith Bldg.
Cox-White Co., Inc., Alaska Bldg.
Caldwell Shipping Co., Henry Bldg.
Caldwell Shipping Co., Henry Bldg.
Commercial Importing Co., 1016 Western Ave.
Chiam Commercial Co., Arctic Bldg.
Disher-List Co., L. C. Smith Bldg.
Dodwell & Co., Henry Bldg.
The Robert Dollar Co., L. C. Smith Bldg.
Dickerson & Gaskell, Inc., L. C. Smith Bldg.
Eastern Importing Co., 1103 Third Ave.
M. Furuya & Co., 216 Second Ave.
Franco-American Trading Co., Globe Bldg.
Griffin & Co., Colman Bldg.
W R Grace & Co. Hoge Bldg. Smith Bldg. W. R. Grace & Co., Hoge Bldg.
G. Batcheller Hall Co., L. C. Smith Bldg.
A. H. Hankerson & Co., Arctic Bldg. K. Hirade Co., 526 Jackson St.

Hasson, Lee & Co., Inc., Marion Bldg.
International Import & Export Co., Inc., Alaska Bldg.
International Lumber Export Co., 323 L. C. Smith Bldg.
Japanese-American Commercial Co., 309 Second, South
Johnson-Lieber Mercantile Co., Pacific Block.
S. L. Jones & Co., Colman Bldg.
Judson Freight Forwarding Co., Arctic Bldg.
F. L. Kraemer & Co., White Bldg.
G. Kawahara & Co., L. C. Smith Bldg.
J. B. Lincoln & Co., 818 Western Ave.
L. Littlejohn & Co., White Bldg.
Logan Commercial Co., American Bank Bldg.
Mack, G. R. T. & Co., 1 Downs Block.
Mitsui & Co., American Bank Bldg.
Mowers & Denny, Empire Bldg. Mitsui & Co., American Bank Bldg.

Mowers & Denny, Empire Bldg.

Mutual Products Trading Co., Empire Bldg.

Murphy-McBride Co., L. C. Smith Bldg.

Northwest Trading Co., L. C. Smith Bldg.

Norton-Lilly Co., Alaska Bldg.

Neleh Trading Co., Stuart Bldg.

W. P. Osborn & Co., Pioneer Bldg.

Oriental Trading Co., Inc., 241 Fifth South.

Overseas Shipping Corp., L. C. Smith Bldg.

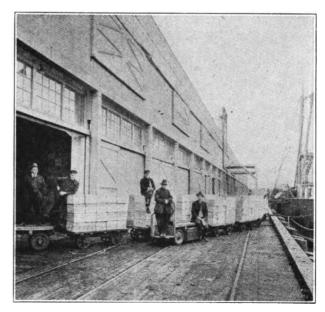
Overseas Corporation, Ltd., 562 1st South.

Ocean Transport Co., Ltd., American Bank Bldg.

Oriental-American Commercial Corp., Alaska Bldg.

Puget Sound Exporters & Importers Corp., New York lock. Block.

Pacific Commercial Co., Hoge Bldg.
A. U. Pinkham & Co., Colman Bldg.
Pacific Importing Co., 1528 Third Ave.
Pacific Importing Co., 1528 Third Ave.
Pemberton & Co., 314 Colman Bldg.
Quong Tuck Co., 721 King St.
Robinson & Walker, Arctic Bldg.
Rothwell & Co., Hoge Bldg.
A. Rupert Co., L. C. Smith Bldg.
Suzuki Bros. Co., 2111 L. C. Smith Bldg.
C. Henry Smith, Arctic Bldg.
J. H. Swezy Co., L. C. Smith Bldg.
S. Sakata Co., 804 L. C. Smith Bldg.
Seattle Far East Trading Co., L. C. Smith Bldg.
Setsuda, K. & Co., L. C. Smith Bldg
Sanyo Co, 516 Pacific Block. Sanyo Co, 516 Pacific Block. Suzuki & Co., 400 Colman Bldg. Corwin D. Smith Co., Central Bldg. N. Sashihara Co., 675 Jackson St.



Seattle Trading Co., L. C. Smith Bldg.
Seattle Exporting Co., 1113 Western Ave.
Tombo Co., 1326 Dearborn.
Togo Co., Inc., 407 Main St.
Trans-Pacific Corporation, Colman Bldg.
Trans-Pacific Trading Co., 400 Central Bldg.
T. Taki Co., L. C. Smith Bldg.
Takata & Co., 206 Leary Bldg.
Uchida Trading Co., Ltd., Leary Bldg.
Universal Shipping & Trading Co., Alaska Bldg.
U. S. Importing & Exporting Co., Inc., Central Bldg.
U. S. Trading Co., Pacific Bldg.
Wa Chong Co., 719 King St.
Willits & Patterson, Inc., Colman Bldg.
Wells Shipping Co., Transportation Bldg.
Frank Waterhouse & Co., Central Bldg.
Youreveta Home & Foreign Trade Co., L. C. Smith Bldg.

### TERMINAL TRACKS—PORT OF SEATTLE TRACKS USED FOR LOADING AND UNLOADING CARS

	Ship Side		Land	l Side	Total Trackage Owned	
TERMINALS	Length of Track Lin. Ft.	Capacity 40 Ft. Cars	Length of Track Lin. Ft.	Capacity 40 Ft. Cars	Lin. Ft.	Miles
Spokane St	1,525 868 5,730	22 22 38 21 140 	3,817 1,465 3,250 2,040 15,470 3,090 29,132	95 36 81 51 387 77 727	5,385 7,500 5,830 3,940 21,200 3,090 46,945	1.02 1.42 1.10 0.75 4.02 0.58 8.89



**PORTLAND** 

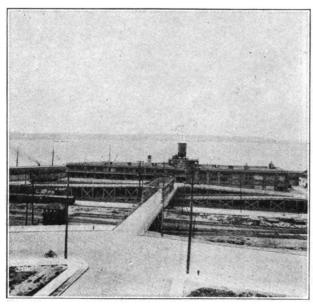
Dry Colors Pigments Chemicals

# REYNOLDS-MORGAN CO.

EXCLUSIVE SELLING AGENTS

Importers - BROKERS - Exporters 1016 L. C. SMITH BUILDING Cable Address: REYMOR, SEATTLE

SEATTLE, U.S.A. Correspondence Solicited SAN FRANCISCO Aniline Dyes Dyewood Extracts Naval Stores Paint Brushes



Bell Street Terminal

#### Berthing Space

Linear Feet of Berthing Space on the Publicly Owned Docks of Seattle:

Smith's Cove		
East side	1,608	
West side	1,780 310	
South side		3,698
Salmon Bay		-,
North side	267	
West side East side	360 360	
East side		987
· Bell Street		• • •
South side	415	
West side	871	1.196
Stacy and Lander Sts.		1,190
North side	1,166	
South side	1,144	
East side	280	2.590
Hanford Street		2,000
South side	1,000	
West side	480	1.480
Spokane Street		1,400
North side	914	
West side	460	1 074
•		1,374
Total		11.325

#### U. S. Bonded Draymen

Eyres & Seattle Drayage Co. Reliable Hauling & Storage Co.
Miller Transfer Co.
Lloyd Transfer Co.
Fortune Transfer Co.
Trans-Continental Freight Co. Napple Transfer Co. General Hauling Co. J. F. Preston. Terminal Transfer Co. Ross & Hogland.

#### Bonded Warehouses

Balfour, Guthrie & Co., Smith's Cove. Eyres Storage & Distributing Co., foot of Main St. Galbraith, Bacon & Co., Wall St., Dock. Pacific Warehouse Co., Maritime Bldg. United Warehouse Co., foot of Virginia St. Washington Cold Storage Warehouse, foot of Virginia. Port Commission Warehouse, Smith's Cove.

#### Customs Brokers

B. R. Anderson & Co., Colman Bldg.
Dodwell & Co., Ltd., Henry Bldg.
Geo. S. Bush & Co., Inc., Colman Bldg.
F. P. Dow & Co., Inc., Pantages Theater Bldg.
J. T. Steeb & Co., Inc., Henry Bldg
Kelly, E. E., Grand Trunk Dock.
Oceanic Trading Co., 708 Arctic Bldg.
Trans-Pacific Trading Co., 400 Central Bldg.

#### Agents and Surveyors

List of agents and surveyors representing the different marine underwriters associations of the world at the Port of Seattle.

Board of Marine Underwriters of San Francisco: S. B. Gibbs, agent, Colman Bldg. Telephone Main 1232.
Lloyds, London. Balfour, Guthrie & Co., agents, Stuart Bldg. Telephone Elliott 1464.
The Board of Underwriters of New York: Frank G.

Taylor, agent for Puget Sound, 264 Colman Bldg. Telephone Elliott 215.

Bureau Veritas: Frank Walker, surveyor, Grand Trunk

Pacific dock. Main 520.

Surveyor to Lloyd's Register: Jas. Fowler, Globe Bldg. Telephone Elliott 1699.

Det Norske Veritas: T. Ostbye, surveyor, Lyon Bldg. Telephone Elliott 3683.

#### Steamship Brokers

Engaged in business of chartering vessels for shipments to foreign countries. Alexander & Baldwin. Balfour, Guthrie & Co. W. C. Dawson & Co. Dodwell & Co. Suzuki & Co. Dollar Steamship Co. Fawkner & Currie. W. R. Grace & Co. James Griffith & Son. Hind, Rolph & Co. Kerr-Gifford Co. Ostrander & Morrison. Parrott & Co. Thorndyke & Trenholme. Geo. S. Bush & Co. R. Anderson.
R. D. Pinneo & Co.
Trans-Pacific Navigation Co. (A. M. Gillespie).
C. K. McGill-Wm. Dimond & Co.
C. M. Pettibone & Co.
Rogers, Brown & Co. Batcheller Hall Co.

#### Ship Brokers

Einar Beyer, Inc.

Ship brokers and marine achitects, 507 Central Bldg., Seattle. The main business is selling, purchasing and chartering vessels for Norwegian interests. The company reprepresents in Seattle the ship broker firm of Joachin Grieg of Bergen, and Christiania. The company is incorporated in the United States for the purpose of being of assistance to Norwegian shipowners as an American corporation.

### Shipbuilding Plants

(Wooden Yards)

Alaska Pacific Navigation Co., Iowa and W. Spokane St. Alaska Pacific Navigation Co., Iowa and W. Spokane St. Allen Shipbuilding Co., Securities Bldg.
Ballard Shipbuilding Co., 24th and Railroad Ave.
Elliott Bay Shipbuilding Co., 1710 Spokane St.
McAteer Shipbuilding Co., 329 Willow St.
Meacham & Babcock Shipbuilding Co., 15th W. and Emerson.

National Shipbuilding Co., Carleton and Garden St. Nilson & Kelez, foot of Massachusetts St.

Patterson-McDonald Co., 5971 E. Marginal Way.

Puget Sound Bridge & Dredging Co., Central Bldg.

Price Shipbuilding Corporation, Meadow Point.

Winslow Marine Ry. & Shipbuilding Co., Burke Bldg.

Wilson's Shipbuilding Co., 26th S. W. and W. Lander St.

#### Steel Shipbuilders

Skinner & Eddy Corporation, 1559 Railroad Ave. Skiller & Eddy Colporation, 1339 Kalifold Ave. J. F. Duthie & Co., Kitsap and East Waterway.
Seattle North Pacific Shipbuilding Co., 3800 Iowa St. Ames Shipbuilding Co., 26th S. W. and W. Hanford. McAteer Shipbuilding Co., 329 Williow St.

#### Government Offices

Army Depot Quartermaster, Pier 11. Army and Navy Merchant Vessel Board, Securities Bldg. Assay Office, 617 9th. Main 613. Attorney, Federal Bldg. Main 6101. Bankruptcy Department, Federal Bldg. Main 123. Bureau of Education, L. C. Smith Bldg. Elliott 4903. Bureau of Foreign and Domestic Commerce, 847 Henry Bldg. Elliott 4980.

Bureau of Mines, Mines Rescue Station, University Cam-

pus. North 839.

Coast and Geodetic Survey, Burke Bldg. Elliott 3178. Commissioner, Central Trust Bldg. Main 181. Custom House, customs only, Federal Bldg. Main 3963. District Judge, Federal Bldg. Main 1377. Engineer's Office, Burke Bldg. Main 228. Food and Drug Inspection Laboratory, Arcade Bldg.

Main 1498

Hydrographic Office. Lowman Bldg. Elliott 848. Immigration Service, main office, 1st and Union.

Immigration Service. Dock Office, Federal Bldg. Elliott 1325.

Internal Revenue Office, Federal Bldg. Main 2673 Local Steamboat Inspectors, Securities Bldg. Marine Hospital Office, Central Bldg. Elliott 4363. Main 2673. Marshal, Federal Bldg. Main 3417. Naturalization Dept., Federal Bldg. Main 123. Navy Branch, Hydrographic Office, Lowman Bldg. El-

liott 848.

Shipping Commissioner, Colman Dock. Main 470. Sipping Commissioner, Colman Dock. Main 470.

Signal Corps, Alaska Cable Office, 1308 1st. Main 373.

Supply and Disbursing Office Bureau of Education,

Alaska Division, L. C. Smith Bldg. Main 851.

Weather Bureau, G. N. Salisbury, Hoge Bldg. Main 363.

U. S. Army Recruiting Office, Pioneer Bldg.

U. S. Army & Navy Merchant Vessel Board, Securities

Bldg.
U. S. Bureau of Animal Industry, Central Bldg.
U. S. Bureau of Education, L. C. Smith Bldg.
Commission, Federal Bldg.

U. S. Coast Guard, Federal Bldg.
U. S. Commissioner, Central Bldg.
U. S. Federal Grain Supervision Bureau, Arctic Bldg.

U. S. Forest Supervision, Securities Bldg.

Federal Horticultural Board, Federal Bldg.
U. S. Inspectors-Instructors, N. G. W., Haight Bldg.
U. S. Internal Revenue Office, Federal Bldg
U. S. Land Office, Central Bldg.

U. S. Marine Corp Recruiting Office, 101 Yesler.
U. S. Naval Training Station, University Campus.
U. S. Shipping Board, Securities Bldg.

#### Foreign Consuls or Representatives

Belgium: J. Hertogs, Vice Consul, City Treasurer's Office, Main 6000.

Bolivia: Nemesio Menacho, Jr., Consul, 2124 L. C. Smith Building, Elliott 715.

Chile: Seattle, Luis A. Santander, Consul, Hoge Building, Main 5196.

China: Goon Dip, Honorary Consul, 711 King Street, Elliott 3071.

Denmark: M. J. Lehmann, Vice Consul, University and Western, Elliott 971.

France: Pierre d'Humilly de Chevilly, Vice Consul, Securities Building, Elliott 4619.

Great Britain: Bernard Pelly, Consul, Lowman

Building, Main 284.

Greece: Christo Lilliopoulos, Consul, White Build-

ing. Italy: Italy: Chevalier Paola Brenna, Consul, 1021 East Columbia Street, East 1408.

Japan: Naokichi Matsunaga, Consul, Central Building, Main 515.

Mexico: Ishmael Garcia Guzman, 309 Central Building, Telephone Elliott 4047.

ing, Telephone Elliott 404/.
Netherlands: J. C, J. Kempees, Vice Consul, Seattle

Netherlands: J. C, J. Kempees, Vice Consul, Seattle National Bank Bldg.
Nicaragua: W. L. Kennedy, Consul, 151 Yesler Way.
Norway: Thomas Samuel Huntington Kolderup,
Vice Consul, Alaska Building, Main 2947.
Panama: Puget Sound, Harry S. Garfield, Vice Consul; Seattle, Adolpho Bracons, Honorary Consul,
Oriental Building; Elliott 4988.
Peru: Jose M. Macedo, Consul, Colman Building;
Elliott 4933.
Puggia: Nikolai Bogoinylaneky: Consul Consul

Russia:

Nikolai Bogoiavlensky, Consul General, Securities Building; Elliott 464.

Spain: John Wesley Dolby, Honorary Vice Consul,

N. Y. Block; Elliott 1056.

Sweden: Andrew Chilberg, Vice Consul, Alaska Building; Main 2947.
Switzerland: Samuel J. Wettrick, Consul; Main 5060

or Elliott 40.

Uruguay: Adolfo Bracons, Consul, Oriental Building; Elliott 4988,

Venezuela: Luis A. Santandar, Honorary Consul,

Hoge Building; Main 5196.

#### Merchants Exchange

The Merchants Exchange of Seattle is a corporation existing for the mutual and co-operative benefit of the shipping, grain, milling and mercantile interests of Seattle and vicinity. It is primarily an information bureau where are collected, compiled and distributed data and statistics relative to the various interests served. It also furnishes a meeting place for the different classes of members and in instances where the general welfare or that of its members is concerned, action as a body is taken. The Exchange furnishes a daily grain call board where members have opportunity for trading in wheat, oats, barley, rye, corn, hay, straw, feed and other commodities. A daily market report is issued for the information of members, this including a statement of car receipts, the various markets, general market data and shipments of flour and cereals from Puget Sound. For the benefit of those in the various maritime branches, special service is furnished relative to the whereabouts, movements and ownership of vessels, their capacity and dimensions, casualties to shipping and other information of a like nature. It is intended to cover the charter market more fully, as Seattle has lately developed rapidly as a chartering center and with the number of ships owned on Puget Sound this importance is certain to grow. Altogether the Exchange performs a function vitally important to a rapidly growing world's seaport. The Exchange is in the Arctic Bldg., Third Ave. and Cherry St.

#### Steamship Routes from Seattle To the Orient

Canadian-Trans-Pacific S. S. Co., semi-monthly service to Orient.

Frank Waterhouse & Co., monthly service to Orient, Siberia and Malay Pen.

H. F. Ostrander & Co., frequent service to Orient. James Griffiths & Sons, frequent service to Orient.

Nippon-Yusen-Kaisha, semi-monthly. Osaka-Shosen-Kaisha, semi-monthly.

Mitsui & Co., semi-monthly.

Pacific Steamship Co., irregular service.

Dollar Steamship Co., irregular service. Trans-Oceanic, irregular service.

Overseas Shipping Co., irregular service.

A. M. Gillespie & Co., semi-monthly service to Orient.

Blue Funnel Line (China Mutual Steam Navigation
Co. and Ocean S. S. Co.), Dodwell & Co., Agents, 28

day service to Orient.

Thorndyke & Trenholme, monthly service to Orient.

Uchida & Co., regular service to Orient.

Suzuki & Co., monthly service to Orient.

Norton Lilly & Co., contemplates service to Orient.

Struthers & Dixon, regular service to Orient. Mitsubishi &Co., comtemplates service to Orient.

#### To Siberia

Frank Waterhouse & Co., monthly. H. F. Ostrander & Co., monthly.

Mitsui & Co., monthly. Russian Volunteer Fleet, irregular service to Siberia and Manchuria

Trans-Oceanic S. S. Co., irregular service to Siberia and Manchuria

Over-Seas Shipping Co., irregular service to Siberia and Manchuria.

Suzuki & Co., monthly service to Siberia and Man-

#### To Europe

Harrison Direct Line (Balfour-Guthrie Co., Agents),

sporadic service.

Royal Mail Steam Packet Co. (Frank Waterhouse & Co.), semi-monthly service; service temporarily discontinued.

Blue Funnel Line (Dodwell & Co., Agents), monthly

service.

East Asiatic Co., monthly service.

Johnson Line (W. R. Grace & Co.), service to Europe.

Fred Olsen Line, irregular service.

#### To Australia and New Zealand

Canadian-Australian S. S. Line, monthly sailings, service to Hawaiian Islands, Fiji Islands, New Zealand, Australia.

### To West Coast of South America

W. R. Grace & Co., Fawkner & Currie Co., J. Henry Smith South American Pacific Lines, service irregular.

#### Coastwise

Alaska Steamship Co., service to Southeastern Alaska, every 6 days; Southwestern Alaska, every 6 days; Alaska Peninsula, monthly during 9 months of year; Bering Sea Points, 28 days during 9 months of year. Pacific Steamship Co. (Admiral Line), operating be-

tween Seattle, California, Alaska and British Columbia; Service to California, tri-weekly; Southeastern Alaska, weekly; Southwestern Alaska, tri-weekly; Bering Sea Points, monthly during 9 months of year; British Colum-

Grand Trunk Steamship Co., operating between Seattle, British Columbia and Alaska: Service to British

Columbia and to Alaska, weekly.

Humboldt Steamship Co., operating between Scattle and Southeastern Alaska: Service to Southeastern Alaska,

every 10 days.

Border Line Transportation Co., operating between Seattle, local points, British Columbia and Alaska: Service to local points, bi-weekly; British Columbia, bi-weekly; Southern Alaska weekly.

Coastwise Steamship & Barge Co. (James Griffith & Sons, Agents): Service to British Columbia and Alaska,

frequently.

Chas. Nelson Co. (W. C. Dawson Co., Agents), service between Puget Sound, British Columbia and California, weekly.

Parr-McCormick S. S. Co., service between Seattle, Puget Sound, British Columbia, Columbia River and California, irregular service.

Canadian Pacific S. S. Co., operating between Seattle and British Columbia: Service to British Columbia, daily; Southeastern Alaska, 10-day service.

Seattle Steamship Co., operating between Seattle and

Alaska, every 15 days.

Chas. R. McCormick Steamship Line, operating between
Seattle, Grays Harbor, Columbia River and California, weekly.

Albers Bros. Milling Co., operating between Seattle and San Francisco, weekly.

Northern Navigation Co., service to Alaska, irregular. Kuskokwim Transportation Co., service to Alaska, irregular.

A. F. Thane & Co., service to Alaska, irregular.

#### Local Routes

Plying between Seattle and local Puget Sound and Lake Plying between Seattle and local Puget Sound and Lake Washington points: Independent Steamship Line; Anderson Steamship Co.; Eagle Harbor Route; Island Belt Transportation Co.; Island Transportation Co.; King County Commission; Kingston Transportation Co.; Kitsap County Transportation Co.; Liberty Bay Transportation Co.; McDowell Steamship Co.; Merchants Transportation Co.; Navy Yard Route; Port of Seattle Commission; Port Co.; Navy Pard Route; Port of Seattle Commission; Port Co.; Merchants Transportation Co.; Navy Pard Route; Port of Seattle Commission; Port Co.; Navy Pard Route; Port of Seattle Commission; Port Co.; Merchants Co.; Merchants Transportation Co.; Navy Pard Route; Port of Seattle Commission; Port Co.; Navy Pard Route; Port of Seattle Commission; Port Co.; Navy Pard Route; Port of Seattle Commission; Port of Seattle Washington Route; Puget Sound Naval Station Route; Puget Sound Navigation Co.; Skagit River Navigation Co.; Star Steamship Co.; Tacoma & Roche Harbor Line Co.; West Pass Transportation Co.; Port Angeles Transportation Co.; Washington Route.

#### Barge and Tow Boats

Alaska Barge Co. Carry-Davis Towing Co. Chesley Tow Boat Co. Chesley Tow Boat Co.
Drummond Lighterage Co.
Elliott Bay Tug & Barge Co.
Lillico Launch Co.
Pacific Barge Co.
Pacific Tow Boat Co.
Puget Sound Tug Boat Co.
Washington Tug & Barge Co.
Washington Stevedore Co.

### R. R. Lines Serving Seattle Interstate Railroads

Trans-Continental Lines . Chicago, Milwaukee & St. Paul Ry. Co. Great Northern Railway Co. Northern Pacific Railway Co. Union Pacific System (O-W-R-N Co.).

#### State Railroad

Local Lines .... Pacific Coast Railroad.

#### Interurban

Electric Lines Puget Sound Electric Railway. Pacific Northwest Traction Co. Seattle and Rainier Valley Ry.

Electric Lines
Puget Sound Traction Light & Power Co.
Seattle Municipal Railway Co. Seattle and Rainier Valley Ry.

#### **SEMARANG**

#### Island of Java, Dutch East Indies

Position: Latitude 6 degrees 56 minutes south, longi-

tude 111 degrees 24 minutes east.
Population: Europeans 10,500, natives, etc. 102,000.
Pilotage: None.
Port Charges: Tonnage or wharf dues, only anchorage dues 16 guilder cents per M3 valid for 6 months for all ports in the Dutch East Indies. Light dues, none. Other charges, Consular fees; Bill of Health f. 6, Signing of Articles f. 4,50.

Stevedoring: Rates for loading and discharging cargo,

50 guilder cents per ton. Overtime cost per hour, night work for half night 50 per cent extra; for all night 100

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per cent extra. Lighterage cost per ton for inward cargo f. 2.75 per koyang, for outward cargo f. 2.50 per koyang. One koyang equals 1,8 tons 20 cwt. or 2,5 tons 40 cubic feet.

Accommodation: Open roads.
Imports: General.
Exports: Sugar, tobacco, kapok, maize, copra, tapio-

ca roots, hides, wood, etc.

Names of Importing and Exporting Firms: McNeil & Co., Mirandolle, Voute & Co., Jacobson, van den Berg & Co., Rouwenhorst, Mulder & Co., Internationale Crediet & Handels Vereenigung Rotterdam, Maintz &

Co., Burns, Philp & Co.
Steamer Lines using the Port: Steamship Co. Nederland and Rotterdamsche Lloyd for Holland and America; Java-Bengal Line, Asiatic S. N. Co. Ltd., and B. I. S. N. Co. Ltd. for British India; K. P. M. for all ports of Dutch East Indies and Australia; Burns, Philp Line for Australia; Java Pacific Line for West America; Ocean S. S. Co. Ltd. for United Kingdom and Holland; Java-China-Japan Line, Nanyo Yusen Kaisha, for England, France, Belgium and Italy,

Lighter harbor under construction.

Semarang is located on the north coast of the island of Java, and is a chief commercial center embracing the district known as Central Java, and in which more than 75 per cent of the soil is under cultivation. Tobacco. tea, sugar, cinchona, and indigo are the chief products. Of late years the development of copper has led to a substantial output for exportation, with the result that activity in this direction is rapidly increasing. Favorable climatic conditions and the high quality of the grazing lands has given encouragement to the raising of livestock, and hides and wool have an important place among the exportations,

### **SEWARD** Alaska

Latitude 60 degrees 10 minutes north, longitude 149 degrees west.

Population, 1,000

Distance from Seattle, 1,408 miles.

Harbor: Located on Resurrection Bay. Wharves owned by the United States government. Terminus of the United States government railway completed (spring 1919) to Anchorage, Matanuska coal fields, Susitna, and in course of construction beyond Susitna. Large coaling station to be built here. Port open all the year.

Steamship companies: Alaska Steamship Company, Pacific Steamship Company.

### **SHANGHAI** China

Position: Latitude 31 degrees 14 minutes 7 seconds north, longitude 121 degrees 29 minutes 10 seconds east. Population: 651,000; 20,000 (foreign).

Pilotage: Not compulsory.

Port Charges: Tonnage dues, 4 Haikun mace per ton

Stevedoring: Rates for loading cargo, 13 Taels per 100 tons. Rates for discharging cargo, 13½ Taels per 100 tons. Lighterage, cost per ton, about 5 tael cents. Lighterage, cost per lighter per day, from Tls. 9/45 for 25/500 ton lighters.

Imports: Piece goods, cotton yarn, machinery, sugar, old

iron, bar iron and general goods.

Exports: Skins, hides, wool, cereals, tea, silk, oils, bristles, tobacco, egg products, etc.

Importers and Exporters: Thomas W. Simmons & Co., Jardine, Matheson & Co. Ltd., Reiss & Co., H. E. Arnhold, East Asiatic Co., Anderson Meyer & Co., David Sassoon & Co. Ltd.

Accommodation: Length of river harbor, 10 miles. Wharves on both sides on more than 25 per cent of the



N. Y. K. Deck

waterfront, mostly with pontoons. Lighters extensively used. Average width of harbor about 1,500 feet. Navigable width 500 feet at 22 feet least depth. Least depth in fairway at Lowest Low Water 22 feet on Wayside Bar. Elsewhere not less than 24 feet. Anchorage in 22 feet and upwards. 14 berths 500—750 feet long with head and stern moorings. 7 dry docks (1 Government), largest 523' x77'x24' 5 shiphyilding companies with 9 yards. Shear x77"x24'. 5 shipbuilding companies with 9 yards. Shear legs up to 65 tons lift, traveling cranes up to 60 tons. Tide rises 10½ feet at springs.

The approach to Shanghai is via the Yangszte Estuary. There is a 16-foot bar of great width over which the tide

rises at least 8 feet and generally 13 feet.

Holts' wharves are associated with the Ocean Steam Ship Co, and are of modern reinforced concrete construction with extension storage and transit accommodation, up to date facilities for handling cargo and excellent deep water frontage in an open section of the harbor. The wharves are available for ocean steamers proceeding to Shanghai and inquiries for berthing and storage accommodation should be addressed to Butterfield & Swire, French Bund, Shanghai.

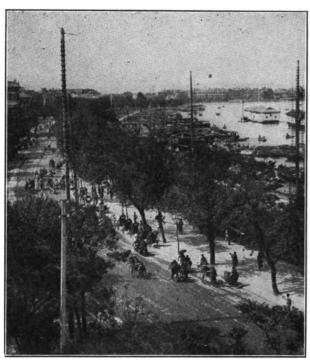
The Tientsin Lighter Co. Ltd., has a well equipped fleet of tugs and lighters for handling general and lumber cargoes ex-Ocean vessels at Taku Bar (for the port of Tientsin on the Haiho River which does not permit of direct discharge by deep draft vessels). The general agents of the company, are: Butterfield & Swire at Shanghai or Tientsin.

Steamer Lines Using the Port: P. & O. M. M. Cie., C. P. O. S. Ltd., P. M. S. S. Co., T. K. K., Shire Line, Glen Line, O. S. S. Co., C. M. S. N. Co., Bucknall & Ellerman Lines, American and Oriental, Barber, East Asiatic, Swedish East Asiatic, N. Y. K., Indo-China S. N. Co. Ltd. Trading between Europe, Canada, U. S. A., India, Australia and China coast and river ports.

Consular Representation: Great Britain, France, United States, (Thomas Sammons, consul general), Italy, Spain, Portugal, Belgium, Holland, Norway, Sweden, Russia, Cuba, Brazil, Australia, Japan.

The China Navigation Co., Ltd. operates a large fleet of passenger and cargo steamers, especially to all the leading China Coast and Yangszte river ports, in addition to services from Hongkong to the Philippines, Siam and Singapore. The general agent of the company are Butterfield & Swire, French Bund, Shanghai, where the company's chief wharves and godowns are situated and to whom inquiries with regard to carriage and transshipment of car-goes and passenger services should be addressed.

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Glimpse of Waterfront

#### Harbor Regulations

1. The term "vessel" in these regulations refers to vessels of foreign type. Regulations concerning native type craft are embodied herein only in so far as is necessary for their due control when working in connection with foreign type vessels. They are regulated in other respects by special notifications.

#### Woosung Anchorages

2. The anchorage at Woosung for vessels of foreign type are:

(a) For vessels other than those provided for in (b) from Woosung lighthouse to Woosung creek, or outside Woosung bar.

(b) For vessels proceeding to Shanghai which are not lightening; for vessels with explosives as cargo on board; and for vessels under quarantine restrictions; outside Woosung bar.

3 A vessel anchored outside Woosung bar shall be clear of the fairway leading to the entrance of the river, and in this respect must conform to the directions of the berthing officer.

4. A vessel requiring to anchor in anchorage (a) shall, on arriving at Woosung spit buoy, hoist the International Code Flag N at the fore, when she will be boarded by the

berthing officer, who will direct her to a proper berth 5. Vessels in anchorage (a) shall moor in accordance with the instructions received from the berthing officer.

#### Shanghai Anchorages

6. The anchorages for foreign type vessels are:

(a) For vessels other than those provided for in (b), (c), (d), and (e): from the south side of the Kiangnan arsenal dock to the Standard Oil Company's wharf.

(b) For vessels carrying explosives: outside Woosung, as provided for in Clause 20.

(c) For vessels carrying mineral oil, turpentine, spirits of wine, arrack, etc.: below the 8th section on the Pootung side, as provided for in Clause 28.

(d) For vessels carrying benzine, naphtha and other

high inflammables: below the Cosmopolitan dock, as provided for in Clause 29.

(e) For quarantine purposes: Outside Woosung, as provided for in Clause 33.

7. Vessels entering the harbor will be boarded by a berthing officer, who will direct them to proper berths.

8. River, coast, and mail steamers which have determined berths are allowed to proceed to them without stoppage, except as provided in Clauses 20, 28, 29 and 33 of these regulations.

9. Four berths in the Upper reach will be kept for the

use of men-of-war.

10. Vessels shall moor in accordance with instructions received from the harbor master, and shall not shift their berths without a special permit, except when outward bound after having obtained their clearance papers.

11. Applications for berths or for permission to shift must be made at the harbor master's office by the ship master, the first officer, or the pilot in charge, when the necessary instructions concerning the berth will be given.

#### Navigation Rules

12. Vessels are required to conform to the International Regulations for Preventing Collisions at Sea.

13. Vessels shall not attempt to cross the Woosung bar or pass through the Astraea channel when the depth signal indicates less water than a vessel is drawing, except as provided for in the following:

Note. It is sometimes the case that a greater depth of water can be obtained by following a track which cannot be indicated by the marks. Captains and pilots wishing for further information than that shown by the depth signals should apply at the harbor office at Shanghai or Woosung, when the draft in excess of the signalled depth, that is permissible by following a stated track, will be notified.

14. Between Woosung creek and Kajow creek no steamer shall overtake and pass another steamer, except

a tug or a tug towing.

15. No steamer or other large vessel shall, except for the purpose of avoiding an accident, anchor between Woosung creek and the Standard Oil Company's wharf.

16. Vessels when passing conservancy works in course of construction or conservancy craft engaged in dredging,

17. Vessels under way to the westward of the lower end of the Standard Oil Company's wharf shall proceed at no greater speed than is necessary to keep the vessel

under control.

18. When vessels are shifting from wharves to headand-stern mooring buoys, or vice versa, and when swing-ing at wharves, a black ball, four feet in diameter, must be hoisted at the flagstaff on the wharf from which the vessel is shifting, or at which swinging, and no vessel shall commence to shift or to swing until such black ball has been hoisted for ten minutes. The vessel whilst so shifting or swinging shall exhibit a black ball, two feet in diameter, at the fore truck.

19. Tow boats and other craft towing within the harbor limits must be of sufficient power to maintain perfect control over their tows. Not more than two lighters or

other craft shall be towed abreast.

#### Munitions

20. Vessels having on board as cargo any high explosive or the specially prepared constituents of such, any plosive or the specially prepared constituents of such, any loaded shells or more than 100 pounds of gunpowder, any quantity of small arm safety cartridges in excess of 50,000 rounds, or any other fixed ammunition of which the aggregate quantity of powder charges exceeds 100 pounds, shall anchor outside Woosung and fly a red flag at the fore, and, in regard to the discharge of same, they shall abide by the instructions received from the Customs. Vessels having to receive on board any such explosives shall observe similar pregautions explosives shall observe similar precautions.

This rule shall not apply to small arm safety cartridges when carried in a properly constructed magazine, so fitted as to admit of its being flooded by a sea cock operated from the upper deck, in which case the number of such cartridges allowed to be carried is not limited.

21. Men of war and other government vessels may, on application to the harbor master, be permitted to take on board or tranship explosives within the harbor limits, provided that such explosives are handled only by their own crews under command of an officer,

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22. Any transfer by boat of explosives, arms, or ammunitions must be covered by a special permit, which will be issued at the harbor master's office upon the owner's written application giving the registered numbers of the

boats to be thus employed.

23. Vessels wishing to proceed to the Kiangnan arsenal to discharge explosive cargo will be permitted to do so, but they must not come above the limit specified in Clause 20 of these regulations without first obtaining permission of the Customs authorities. After taking explosive cargo on board at the Kiangnan arsenal, vessels will not be allowed to anchor between the arsenal and Woosung.

24. No lighters or other boats, except those which have permanent decks or coverings, shall be allowed to receive any of the articles mentioned in Clause 20 of these regulations, and all such articles when received on board any such lighter or boat must be stowed under deck or within

the permanently closed-in space.

25. Every craft, of whatever description, conveying explosives through any part of the waters of the port shall exhibit a red flag, not less than 6 feet by 4 feet, at the foremast head, or where it can best be seen; and in the case of all boats or lighters thus employed which are not fitted with masts, the flag must be exhibited at a height of not less than 12 feet above the highest part of the deck or house.

26. No lighter or other boat having explosives on board shall be allowed to anchor or make fast anywhere between Kiangnan arsenal and Black point, and no lighter or boat shall pass between these limits except in the daytime, and then only on a fair tide unless propelled by steam

or towed by a tug.

27. The storage of explosives of any sort shall not be allowed anywhere on or near either shore of the Whang-poo or its affluents in the neighborhood of Shanghai, except with the permission of the Customs authorities.

#### Mineral Oil, Etc.

28. Vessels arriving with mineral oil, turpentine, spirits of wine, or arrack as cargo shall be berthed on the Pootung side of the river below the 8th section of the harbor or alongside a Tungkadu wharf, or the Nanmatou wharf, south of the Tungkadu dock, and there must remain until all such cargo has been discharged. Vessels loading such cargo shall do so only where it is permitted to be discharged, and from there proceed to sea.

Vessels, at any wharf, are permitted to handle a quan-

tity of kerosene not exceeding 50 cases.

Bulk oil steamers are required to take all such precau-

tions as are customary in their trade.

29. Vessels arriving with naphtha, benzine, ether, or other high inflammables as cargo, shall not proceed above the lower side of the Cosmopolitan dock. But, on special application to the harbor master, vessels having on board only 300 or less drums of 65 or less imperial gallons of benzine will be allowed to proceed to the 11th section and land such cargo on the Pootung shore, below the Yangking creek, under the conditions stated in Clause 30. Vessels loading such cargo shall do so only where the same is permitted to be discharged, and from there proceed to sea.

30. The storage of naphtha, benzine, ether, or other high inflammables, in quantities exceeding 450 drums of on the Pootung shore, below the Cosmopolitan dock. But, on special application to the harbor master, permission may be granted to store benzine in the 11th section, on the Pootung shore, below the Yangking creek subject

to the following conditions:
(a) That the quantity does not at any time exceed 450

drums of 65 imperial gallons.
(b) That such drums of benzine be stored in a godown

approved by the harbor authorities.

31. No fires, for cooking or any other purpose, and no smoking shall be allowed on board any lighter or other boat when going alongside a vessel which has explosives, naphtha, benzine, etc., on board, nor while there are any such explosives, naphtha, benzine, etc., on board such lighter or boat.

32. Vessels having on board as cargo calcium, carbide, chlorate of calcium, chlorate of potash, phosphorus, oil of mirbane, acid nitrate, sulphuric acid, sulphur nitrium, sodium peroxide, hydrochloric acid, and other such preparations which are required by the insurance companies to be carried on deck, shall be berthed on the Pootung side of the river, where such cargoes shall be stored only in special godowns. Vessels loading such cargo shall do only where it is permitted to be discharged, and from there proceed to sea.

#### Infectious Diseases

33. Vessels arriving from an infected port, or having any infectious disease on board or any disease suspected to be infectious, and vessels on board which a death has occurred during the voyage from her last port shall, as provided by the quarantine regulations for the port, on approaching Woosung hoist the Quarantine Flag (International Code Flag Q) at the fore, anchor outside Woosung spit buoy, and keep the flag flying until

ratique has been granted.

No person shall be permitted to leave or board such vessel without a permit from the harbor master or the port

health officer.

#### Conservancy

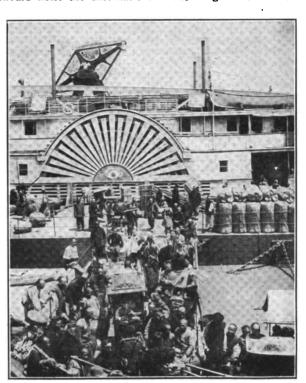
34. No wharves, jetties, pontoons or buildings shall be established, and no reclaiming or other riparian work commenced, without the permission of the Whangpoo Conservancy Board. Such permission is to be applied for through the harbor master.

35. No buoy shall be laid down without the sanction of the harbor master and his approval of its moorings. Unoccupied buoys must be lighted from sunset to sunrise.

36. All buoys shall be subject to the control of the harbor master and, when they are so placed as to obstruct the passage of the vessels, or are not moored in such a way as to economize berthing space, the harbor master shall be at liberty to order them to be shifted. In case of refusal or neglect on the part of the owners of a buoy to shift its position as directed by the harbor master, the latter

may cause it to be removed at the cost of the owners.

37. Ballast, ashes, garbage, refuse spoil obtained by dredging or otherwise, etc., must not be thrown into the river. Vessels wishing to discharge ashes or other refuse should hoist the International Code Flag Y at the fore



Unleading a River Steamer



Alene China Merchant Dock

truck, when a licensed ash boat will attend and take delivery-at a fixed tariff.

38. In the case of wrecks within the harbor, or in the approaches to the port, which form a danger to navigation, if no active steps for removal have been taken within a reasonable time—as specified by the harbor master—the wreck will be removed or destroyed by the marine department of the Customs at the owner's expense.

#### Miscellaneous

39. All arc lights and other powerful lights on wharves, pontoons, banks of the river, and on board vessels shall be so screened or shaded riverwards as to avoid embar-rassment to navigators. Searchlights shall not be used in such manner as to embarrass navigation.

40. The blowing of steam whistles or sirens, except for the purpose of signalling in accordance with the Regulations for Preventing Collisions at Sea or for the pur-

pose of warning vessels of danger, is strictly forbidden.
41. No vessels shall fire guns, cannon, or small arms

within the harbor.

42. No vessels except men-of-war shall use swinging booms. Swinging booms will be rigged in from sunset to sunrise.

43. All vessels shall keep on board a sufficient number of hands to clear and pay out chain. The hawse must

always be kept clear.

44. Vessels discharging timber overboard, when swung out of line with the direction of the ebb and flood currents, shall have no rafts or logs trailing astern. When the vessel is in direct line with the ebb and flood currents, rafts or logs may trail astern for a distance of only 100 feet from the vessel. Rafts or logs must not be accumulated in such manner as to obstruct the fairway.

45. Lighters and other boats are not to be made fast

to vessels in such a manner or in such numbers as to interfere with the free passage of other boats or vessels

through the harbor.

46. In case of fire occurring on board a vessel in port the fire bell must be rung immediately by that vessel, those above and below her, and the signal NH, International code ("Fire—want immediate assistance") hoisted by the burning vessel, if possible, and by those above and below her, during the day, or the light lowered and hoisted continually during the night. Notice should immediately be given to the river police hulk and to the nearest municipal police station.

47. Vessels infringing these regulations will have their

entrance, working, and clearance stopped by the Customs, until such infringement is remedied, or will be dealt with

by their national authority.

#### Notice

1. Vessels allotted special numbers under the port signal code are requested to fly the same on entering the harbor.

2. Masters of vessels are requested to furnish the har-bor master's office or the coast inspector's office with any information they may possess relative to new dangers, such as rocks, shoals, etc., they may have discovered.

3. If the master of a vessel has any complaint to prefer

against a pilot, he should forward the same in writing

to the harbor master.

4. At the harbor master's office may be seen all local harbor notifications and notices to mariners. These, as well as all notices pertaining generally to the China sea, are also exhibited in the public room at the coast inspector's office.

5. Vessels are recommended not to sail or steam through the shipping with the tide, it being highly dangerous to

do so, especially during spring tides.

6. The following are the call flags (port signals, China) which are used at Shanghai:

N—Berthing officer wanted.

I.—Customs officer wanted.
G—Doctor wanted.

YN-Police wanted.

Y—Ash boat wanted.

NH—Fire or leak; assistance wanted.

B—Explosives on board as cargo.

F—Mail for the Chinese post office.

U—Shanghai Tug & Lighter Co.'s towboat wanted.
X—Kochien Transportation & Tow-boat Co.'s towboat wanted

R—Shanghai Waterworks Co.'s waterboat wanted. I—French Waterworks Co.'s waterboat wanted.

O—Quarantine.
The Ocean Steamship Co. Ltd. and the China Mutual S. N. Co. Ltd., forming the well known "Blue Funnel" Line, operate ocean services between Pacific Coast ports and China and Japan in addition to their Far Eastern services to and from the United States, United Kingdom and Europe, via Panama and Suez. The cargo capacities of their general freight carriers range from 7000 to 19,000 measurement tons. Butterfield & Swire are their Shanghai representatives.

An exhaustive report recently submitted by a board of hydraulic engineers to the Whangpoo Conservancy Board recommends an expenditure of nearly a hundred million dollars for the improvement of the harbor. This plan would involve as its essential feature the conversion of the harbor into a huge wet dock by means of ship-locks at Woosung, which would provide accommodation for vessels drawing 40 to 50 feet. It is also proposed to increase the depth in the approaches of the port by training

Shanghai has absorbed approximately one-half of the foreign trade carried on in China, and its import and export business averages around \$360,000,000 annually.

### SHIMONOSEKI-MOJI

#### Japan

Position: Latitude 33 degrees 57 minutes 24 seconds north, longitude 130 degrees 56 minutes 9 seconds east. Population: Shimonoseki 70,000, Moji 75,000.

Pilotage: Not compulsory.

Port Charges: Tonnage or wharf dues, 5 sen per ton net register. Customs, permits for Sunday and holiday Y. 2 per hour. Night work Y. 4 per hour up. Other

charges, buoy rent.

Stevedoring: Rates for loading cargo, 35 sen per ton.
Rates for discharging cargo, 30 sen per ton. Overtime cost per hour, 50 per cent on above charges. Cost per hour for general labor, 15 sen. Lighterage, cost per ton, 65 sen. Lighterage, cost per lighter per day, 10 sen per ton; heavy lifts, extra; demurrage.

Accommodation: Open anchorage and four buoys. Mini-

mum depth of water at low tide, 5 fathoms.

Imports: Machinery, rails, etc., fertilizers, iron ore, coal, raw cotton, raw sugar, pig iron, kerosene, oil, pulp, bean and oil cake, beans, peas, wheat, eggs, manures.



Exports: Principally cargo and bunker coal; cement, flour, cotton, yarn, refined sugar, piece goods, rice, marine products, glassware, planks.

Products, glassware, planks.

Names of Importing and Exporting Firms: Jardine,
Matheson & Co. Ltd., Mitsui Bussan Kaisha, Mitsubishi,
Holme Ringer & Co., Samuel, Samuel & Co. Ltd.

Steamer Lines Using the Port: Nippon Yusen Kaisha,
Japan-European Line, Japan-Indian Line, Japan-New York
Line, Japan-Pacific Coast U. S. A. Line, Japan-China
Line, Osaka Shosen Kaisha, Japan Coasting Service, JapanSouth American Line, Japan-Australian Line, Japan-China South American Line, Japan-Australian Line, Japan-China Korea Coasting Service, Nanyo Yusen Kumi, Japan-South Seas, P. & O. and B. I., European, Indian and China Services, Indo-China S. N. Co., Ltd., Japan-Calcutta Line, China Coast Services; Ellerman & Bucknall S. S. Co. and China-London Line, Bank Line, Ltd., Japan-South-Africa, Blue Funnel Line (Alfred Holt), Liverpool-China-Japan Line; Eastern & Australian S. S. Co., Ltd., Toyo Kisen Kaisha, Java-China-Japan Line.

Consular Representation: British Consul, Norwegian

Vice Consul.

### **SINGAPORE**

#### Straits Settlements

Position: Latitude 1 degree 16 minutes north, longitude 103 degrees 49 minutes east.

Population: 303,321.

Pilotage: Not compulsory. Roads to wharf and vice versa, \$1.35 per foot draft.

Port Charges: Tonnage or wharf dues, 55 cents per ton.

Customs, nil. Duty on opium, liquors and tobacco only.
Stevedoring: Rates for loading and discharging cargo, at wharf, 30 cents per ton; in roadstead, 20 cents per ton. Overtime, at wharf, \$20 per half night, \$50 per whole night; roadstead, \$10 per half night, \$20 per whole night. Lighterage, cost per ton, 50 cents. Lighterage, cost per lighter per day, \$15 for 50 ton lighter.

Accommodation: Wharves-Singapore harbor board's wharves available at all states of tide. Docks—The town is well off for docks, The Tanjong Pagar Dock Board premises, which were taken over from a public limited liability company by the Colonial government in 1906 at a cost of £3,448,339 fixed by arbitration, lie about a mile to the westward of the town, fine wharves affording berthage for a large number of vessels at one time, with sufficient water alongside for vessels of the deepest draft and protected by a breakwater from the swell from the roads and from the strength of the tides. There are commodious godowns erected on the wharves for the storage of goods. Coal sheds, capable of storing 50,000 tons, adjoin the godowns, while hand cars on rails essentially aid the labor of unloading vessels. The usual accompaniments are also to be found—two graving docks, the Victoria dock, 450 feet long and 65 feet broad at entrance, and the Albert dock, 485 feet long and 60 feet broad at entrance—a machine shop, boiler and masting shears, etc. Considerable improvements are now under construction, including a railway running from one end of the wharves to the other. The New Harbor Dock Company's premises, situated about three miles further west, include two docks of 375 and 444 feet in length, respectively, with sheds, workshops, etc. They were purchased by the Tanjong Pagar Dock Company in 1900, and were included in the sale to the government in 1906, as was also the patent slip at Tanjong Rhu, which Board has carried out improvements in the docking and wharfage facilities of the colony at a cost of over £2,000,000. The new graving dock, completed in 1912, is 894 feet long and 100 feet wide, with a depth of sill of 34 feet, measurements which make it the largest dock east of Suez.

Singapore is the most important port of call in the Straits Settlements for vessels to and from the Far East. Precipitation averages 85.8 yearly.

Imports: Cottons, provisions, coal, rice, hardware, paper, liquors, opium, flour, petroleum, gunnies.



Singapore Harbor

Exports: Tin, rubber, gambier, gutta percha, coffee, hides, rattans, sago flour, pepper, tapioca, copra, nutmegs, canes, gums, M. O. P. shells, white and black pepper, camphor, gum elastic, coffee, sapan wood, shellac, preserved pineapples.

served pineapples.

Names of Importing and Exporting Firms: Adamson, Gilfillan & Co. Ltd., The Borneo Co., Boustead & Co., Guthrie & Co. Ltd., McAllister & Co. Ltd., Paterson, Simons & Co. Ltd., Thomas W. Simmons & Co.

Steamer Lines Using the Port: P. & O., British India, Apcar, N. Y. K. (Japanese Mail Line), "Nederland" and Rotterdam Lloyd, Ellerman & Bucknall Co. Ltd., China Mail S. S. Co. Ltd., Pacific Mail S. S. Co. Inc., Messageries Maritimes, Siam Steam Nav. Co. Ltd., Straits Steamship Co. Ltd., Ocean S. S. Co. Ltd., West Australian S. N. Co. Ltd., Burns, Philp & Co. Ltd., Canadian Pacific Ocean Services Ltd., Toyo Kisen Kaisha, Royal Packet Navigation Co. of Batavia, Indo-China Steam Navigation Co. Ltd. Co. Ltd.

Consular Representations: United States, (Edwin N. Gunsaulus, consul general), Belgium, Chile, China, Denmark, France, Italy, Japan, Netherlands, Norway, Portugal, Russia, Siam, Sweden, Spain.

## **SKAGWAY**

#### Alaska

Latitude 59 degrees 20 minutes north, longitude 135 degrees west.

Population, 1,000.

Harbor: At head of Lynn canal and terminus of the White Pass & Yukon Ry. Entrance for Yukon and Yukon river points.

Steamship Companies: All lines calling at Ketchikan

and Juneau call at this port.
Wharves: White Pass & Yukon Ry. wharf, used by all steamship lines.

### **SOERABAIA** Island of Java, Dutch East Indies

Position: Latitude 7 degrees 11 minutes 51 seconds south, longitude 112 degrees, 44 minutes 21 seconds east. Population: 150,198.

Pilotage: Compulsory. From \$50 according to size and

draft of vessel.
Port Charges: Tonnage, f. 0.16 per M3 per 6 months, to be paid at the first port of call in N. I. Customs, for holiday permits and after office time, f. 1 per hour.



Stevedoring: Rates for loading and discharging cargo, f. 0.30 per ton for general cargo. Overtime cost per man, f. 0.50 for half a night, f. 0.80 for a whole night. Cost per day, general labor, f. 1 per man. Lighterage cost per ton, f. 1.50 for outward cargo and f. 1.70 for inward cargo.

Accommodation: Anchorage in Roads in 6 to 10 fathoms. basin capable of containing at least 20 large vessels. New harbor practically completed with quay space for say a dozen large steamers. Draft at North Bar 18½ feet LWST range 3 to 7 feet. South Channel 12 feet range 6 to 10 feet. Two floating cranes, lifting capacity 25 and 50 tons. Government drydocks.

Imports: Cotton goods, fancies, hardware and iron mongery, machinery, potteries, sulphate of ammonia, provisions, canvas, glasswares, paper, petroleum, candles.

Exports: Sugar, tobacco, coffee, tea, rubber, kapok, timber, hides flour, rice, tapioca, copra.

Names of Importing and Exporting Firms: Burt Myrtle & Co., Geo Wehry & Co., Van Nierop Co., Fraser Eaton & Co., Handelsvereeniging Amsterdam, Internationale

Crediet en Handelsvereeniging Rotterdam.
Steamer Lines Using the Port: Stoomvaart Maatschappy Nederland and Rotterdamsche Lloyd to Holland and New York; Ocean S. S. C. Ltd. and China Mutual S. N. C. Ltd. to England; Java-China-Japan Line to China, Japan and San Francisco, British India S. N. C. Ltd. and Asiatic S. N. Ltd. to British India, Koninklyke Paketvaart Maatschappy in the N. I. Archipelago, Singapore, Penang, and Australia; Nanyo Yusen Kabushiki Kaisha to Japan.

Consular Representations: All principal powers. Harry Campbell is consul for the United States.

Soerabaia occupies a strategic position at the northeastern end of the island of Java acting as the first important seaport for all steamers from the east. The harbor. with its sheltered roadstead, affords complete protection against storms for even the largest vessels. The island is noted as one of the largest cotton cloth markets in the world, and the heaviest importations pass through the port of Soerabaia. The extensive agriculture operations carried on throughout the district served by the port keeps a constant pressure on the demand for modern farm implements. In the industrial field, shipbuilding occupies a most important place in the activities of the port.

### SOUTH BEND Washington

Population about 4.000.

Latitude 46 degrees 40 minutes 42 seconds north, longi-

tude 122 degrees 24 minutes west.

Depth: Willapa Harbor bar, 28 feet. Depth at wharves,

20 to 30 feet.

Docks: City Dock, South Bend Wharf Co., wharf with warehouse capacity 500 tons. Several lumber wharves—owners, McCormick Lumber Co., South Bend Mills & Timber Co., Northern Pacific Ry. Total capacity, 7,500,000

Drydocks and marine railways: None.

Customs representative: Geo. Devers, deputy collector. Bonded warehouses: None.

Tug boat companies: Coulter Tow Boat Co., T. H.

Railroad connections: Northern Pacific Ry., Puget Sound & Willapa Harbor Ry. Co.

List of charges: Wharfage, average 10 cents per ton. Anchorage, none. Stevedoring labor, 50 cents per hour, 75 cents for overtime. Water, \$7.50 for each boat. Cartage 50 cents per ton. Towing, Puget Sound rates.

Lumber manufacturing and shipping forms the principal industry of South Bend, and several very large sawmills are located at tide water, with wharves and good

shipping facilities.

### **SWATOW** China

Position: Latitude 23 degrees 20 minutes 43 seconds east, longitude 116 degrees 39 minutes 3 seconds north.

Population: Estimated 75,000.

Pilotage: Not compulsory. All steamers and sailing

Pools 5 per foot English measurement.
Port Charges: Tonnage dues, 4 mace per ton, available
4 months only. Other charges, permits to work at night,
Haikwan Taels 10; Sunday or holiday permits, Haikwan Taels 20.

Stevedoring: Rates for loading and discharging cargo, 75 cents per 100 packages. Cost for general labor, 80 cents per 100 packages. Lighterage, cost per lighter per day, \$6

to \$8.

Accommodation: Butterfield & Swire have four pontoons and one buoy; Jardine, Matheson Co. Ltd. one pontoon and one buoy; Douglas S. S. Co., China Merchants S. S. Co., Bradley & Co. Ltd., O. S. K., each one buoy; other vessels may anchor in harbor limits, where there is ample room. Draft available, high tide, between 22 and 24 feet. Imports: Beancake, beans, peas, cereals, varn and piece

goods, etc. Exports: Sugar, liquid indigo, fruits, paper, tea, tobacco,

grass cloth, earthenware, etc.
Names of Importing and Exporting Firms: Messrs.
Jardine, Matheson & Co. Ltd., Butterfield & Swire, Bradley & Co. Ltd., W. G. Humphreys Co., Alex Ross & Co., Ki Heng Co.

Steamer Lines Using the Port: Douglas S. S. Co. Ltd., Steamer Lines Using the Port: Douglas S. S. Co. Ltd., Hongkong, Swatow, Amoy and Foochow; Indo-China S. N. Co. Ltd., Hankow, Shanghai, Swatow, Hongkong and Canton; China Navigation Co., Hankow, Shanghai, Amoy, Swatow, Hongkong, Canton; Osaka Shosen Kaisha, Hongkong, Swatow, Amoy and Formosa; Chino-Siam S. N. Co. Ltd., Hongkong, Swatow and Bangkok (Siam).

Consular Representation: Great Britain, United States

France, Japan, Russia, Norway.

#### Pilotage Fees

The harbor pilotage Fees payable to the pilots concerned are as follows:

(a) Shifting a vessel's berth to or from any steamer,

wharf or pontoon, \$20 Mexican in full.

(b) Taking a vessel to or from, or shifting to or from any oil installation moorings, vessels up to and including 1,500 tons, Mexican \$15 in full; over 1,500 tons, Mexican \$25 in full.

(c) Shifting a vessel's berth in the stream, Mexican \$15

in full.

#### Weather and Storm Signals

Typhoon and storm warnings are received from the Zi-ka-wei Observatory, Shanghai, and Hongkong, and will be signalled at the Storm Signal Station of the I. M. C.; the symbols are the same as used by the Zi-ka-wei Observatory, Shanghai. All weather telegrams received are signalled and shown on the notice board outside the harbor master's office; also the latest pilot charts for the North Pacific Ocean. Should a typhoon be expected to pass close to Swatow, a red drum will be hoisted on the Custom's flagstaff.

#### Harbor Regulations

1. The anchorage for foreign vessels is between T'ta-tau point Kak-chio point.

2. Vessels entering the anchorage will be boarded by the boat officer, who will direct them to proper berths.

3. Steamers having determined berths are allowed on arrival to proceed to them without stoppage, unless they have dangerous or explosive cargo or infectious disease on board, in which case they are to be governed by clauses 9 and 10 of these regulations.

4. Vessels are to moor in accordance with the orders received from the harbor master, and not to shift their berths or remove from the anchorage without a special permit, except when outward bound and after having ob-

tained their clearance papers.

5. Applications for berths or for permission to shift must be made at the harbor master's office by the agents,

the shipmaster, or the pilot in charge.

6. All vessels when at anchor shall, from sunset to sunrise, exhibit where it can best be seen, and at a height from the deck not less than 20 feet, a white light visible all round at a distance of at least one mile.

7. Vessels are required to keep their chains clear, and not to have lines out to buoys, wharves, or other vessels any longer than necessary when shifting their berths.

8. Without written permits from the harbor master no cannon or small arms shall be fired off on board merchant

vessels within the harbor limits.

9. Vessels arriving at this port and having on board as cargo more than 100 pounds of gun powder, fixed ammunition in excess of 20,000 rounds (or the aggregate powder charges of which exceeds 100 pounds), or any quantity whatever of nitro-glycerine, dynamite, or other high explosive, shall anchor not less than one mile below the lower limit of the harbor and fly a red flag (B, International Code) at the fore during daylight, and shall abide by the instructions received from the Customs.

10. A vessel arriving with a contagious disease on board shall stop below the lower limit of the harbor, shall fly a vellow flag at the fore, and shall allow no one to disembark or come on board without permission from the

harbor master's office.

11. Masters of vessels shall not permit ballast or ashes

to be thrown overboard.

12. No buoy may be laid down without the sanction of the harbor master and his approval of the moorings by

which it is to be held in position.

13. Buoys that are already laid down are subject to the control of the harbor master, and where they are so placed as to obstruct the passage of vessels through the harbor, or are not moored in such a way as to economize berthing space, the harbor master will be at liberty to order them to be shifted. In case of refusal or neglect on the part of the owners of a buoy to shift its position as directed by the harbor master, the latter may cause it to be removed at the risk of the owners thereof.

14. In case of fire occurring on board a vessel in port, her bell must be rung immediately and the signal B J F, International Code ("Ship on fire"), hoisted, if possible, during the day, or the light lowered and hoisted continually during the night.

15. Vessels infringing clause 9 of these regulations, by coming within the harbor limits with dangerous or explosive cargo on board in excess of the quantity therein allowed, will be notified by the harbor master to proceed to an anchorage not less than one mile below the lower limit of the harbor, and their entrance, working, and clearance will be stopped by the Customs until this notice is complied with. All other vessels not occupying the berths assigned to them as required by the 2nd, 4th and 5th clauses of the above regulations are likewise liable to have their entrance, working, and clearance stopped by the Customs until the harbor master reports them as berthed in accordance with these directions.

Masters of vessels committing breaches of the other regulations will be dealt with by the consular authorities.

1. A vessel approaching the port should, when off Bill island, display her house and other distinguishing flags, and the flag denoting the name of the port she comes from, in order that the same particulars may be signalled from

the Custom's signal station.

2. Masters of vessels are requested to furnish the harbor master's office with any information they may possess relative to any new dangers, such as rocks, shoals, etc., that

may be discovered.

3. If the master of a vessel has any complaint to prefer against a pilot, he should forward it in writing to the

harbor master.

4. At the harbor master's office may be seen all notices pertaining to the department, as well as others that are of interest to navigators in the China Sea.

#### Time Gun

A gun is fired at noon on Saturdays; the time ball is hoisted half mast at 5 minutes to 12 (noon), to the mast head at 1 minute to 12 (noon), and dropped at noon. The 120 degrees E. is taken as the standard meridian for noon.

Position of time ball staff: Latitude 23 degrees 21 minutes 43 seconds north, longitude 116 degrees 40 minutes 29 seconds (7 hours 46 minutes 42 seconds) east.

#### Sanitary Regulations for Foreign-Rigged Vessels

1. In the event of a case of cholera (substantiated by a medical officer) occurring on board any foreign-rigged vessels in the harbor, the master of such vessel shall forthwith hoist the yellow, or quarantine, flag (letter Q in the International Code of Signals), and shift his anchorage to the quarantine ground. On the exhibition of the quarantine flag the Customs authorities will immediately stop all landing of shipment of merchandise, personal effects, passengers, etc., from or to the vessel concerned.

2. While at the quarantine ground the vessel shall continue to fly the quarantine flag, and she shall remain there and be cut off from all communication with the shore or with other vessels (except in so far as such communication may be sanctioned in writing by her medical attendant) until such time, not exceeding ten days after the termination of any case of cholera on board, as she shall have been declared in writing by her medical attendant to be free from disease.

3. Such precautions in the way of burning clothing, fumigating, etc., as may be ordered by the medical officer must be strictly carried out on board the vessel. On no account are the evacuations, clothing, etc., of a patient to be thrown overboard without previous thorough dis-

infection.

4. The quarantine ground is that portion of the river below the harbor limits which lies east of a line running south from the Mud flat buoy, west of a line running south from the Round fort, and north of the fairway of vessels entering and leaving the harbor.

### SYDNEY (See Port Jackson) New South Wales, Australia

### **TACOMA** Washington

Population: U. S. government estimate, 125,000. Harbor: Latitude 47 degrees 15 minutes 15 seconds north, longitude 122 degrees 26 minutes 24 seconds west.

Depth of harbor: Average over 50 fathoms. Not less

than 25 feet at any wharf.
Harbor master: W. G. Rowland.
Mooring buoys owned by city. Two.

Mooring charges: For vessels over 500 tons, \$2 per

day.
U. S. Customs representative: Wm. A. Fairweather,

Bonded warehouse: Milwaukee Ry., Broadway Wrhs. Co., 21st and Broadway; Commercial Truck and Storage Co., So. 23rd and E St.; Great Northern Ry., 21st and Co., S D St.

Customs brokers: A. W. Thornely Co., J. T. Steeb & Co., Dodwell & Co., Saunders Ward & Co., George S. Bush & Co., Frank P. Dow & Co.

The grand total of imports and exports for Tacoma during 1918 amounted to \$318,613,938, and the total cargo, 2,862,987 tons. Exports aggregated \$125,024,855, representing an increase of nearly \$50,000,000 or 20 per cent over 1917. Imports reached the enormous sum of \$193,-589,083.

589,083.

The leading items of import exceeding a million dollars in value were: Antimony, \$2,053,200; beans, \$2,624,475; braids, straw, hemp, etc., \$3,008,166; cotton and cotton goods, \$1,472,053; canned salmon, 406,662 cases, \$3,951,093; gunnies, \$1,500,300; hemp, \$9,039,327; hides, all kinds, \$4,524,127; fuel oil, \$2,335,451; logs, 255,639,746 ft., \$4,054,295; oils for commercial uses, \$16,735,510; ores, all kinds, \$34,668,090; paper and pulp, \$2,316,798; peanuts, \$2,745,618; rubber and rubber products, \$17,878,843; rice, \$5,200,057; rammie fibre, \$1,107,830; silk and silk products, \$17,632,026; tin slabs, \$9,918,487; tea, 348,022 pkgs., \$6,060348; tobacco, \$8,301,720; wool, washed, and in greases, \$3,785,428. greases, \$3,785,428.

Exports: 900 automobiles, \$1,215,833; cotton, \$17,-646,770; drygoods and cotton goods, \$4,191,609; explosives, \$2,325,837; cigarets, 4,141,924,000, \$6,999,499; electrical



goods and machinery, \$2,632,888; fish cured and canned, \$1,319,528; hardware, \$2,120,540; flour, 2,160,474 bbls., \$22,747,555; iron and steel, \$16,922,902; copper, \$3,019,228; lumber, 93,411,078 ft., \$2,519,912; milk, \$1,145,395; machinery, \$8,055,544; tin plate, \$5,965,968; tobacco, \$3,-283,471; oils for commercial use, \$1,626,310; paper and pulp, \$2,809.378.

283,471; oils for commercial use, \$1,020,310; paper and pulp, \$2,809,378.

Cargo tonnage: 1,967,142; arrivals, 12,414; reg. ton, 4,429,655; departures, 12,551; reg. ton., 4,413,563.

Steamship lines: American-Hawaiian S. S. Co., Baker dock; Blue Funnel Line, Dodwell & Co., Ltd., Tacoma Bldg.; Alaska S. S. Co., Perkins Bldg.; Harrison Line, Balfour, Guthrie & Co., Perkins Bldg.; Osaka Shoshen Kaisha, 1017 S. A. St.; Nippon Yusen Kaisha, Milwaukee dock; Matson Navigation Co., Baker dock; Pacific S. S. Co., Perkins Bldg.; Royal Mail Steam Packet Co., Frank Waterhouse & Company, Garland S. S. Corporation, 523 Tacoma Bldg., W. R. Grace & Co., 523 Tacoma Bldg.

Tow boat companies: Tacoma Tug & Barge Co., Tacoma Tug Boat Co., Puget Sound Tug Boat Co., Milwaukee Tug & Barge Co., Foss Launch Co.

Oil docks: One, Standard Oil Co.

Lloyd's Agent: John F. Lyon, 602 National Realty Bldg. Railroad connections: Northern Pacific Ry., Great Northern Ry., Oregon-Washington R. R. & N. Co., Chicago, Milwaukee & St. Paul Ry

Water Rates: 1,000 cubic feet, \$3.20; 5,000 cubic feet, \$9.50; 7,500 cubic feet, \$10.75; 10,000 cubic feet, \$12.00; 15,000 cubic feet, \$14.50; 20,000 cubic feet, \$17.00.

#### Shipvards

Todd Drydock & Construction Corporation. The Foundation Company, Inc. Tacoma Shipbuilding Company. Seaborn Shipyards Company. Wright Shipyards Company. Babare Bros.

Babare Bros.
Martinolich Shipbuilding Company.
The total output of Tacoma's seven shipbuilding companies in 1918 was 50 vessels, the aggregate tonnage being 197,000 tons. Of these, eight were of steel construction, of 7,500 tons each, launched at the Todd yards. The remainder were 20 wooden vessels of 3,000 tons each, built for the French government; these being an auxiliary steam schooner type; and 22 Ferris type vessels, each 3,500 tons, delivered to the U. S. Shipping Corporation tion.

In 1917 the number of men employed in the shipyard industry in Tacoma reached the maximum of 4,500 men. This was increased to nearly 15,000 men at the height of activity in the fall of 1918. Prospects for 1919 indicate a continuance of the shipbuilding activity, but whether or not at the same rate as in 1918 will depend upon the policy of the U. S. Shipping Board. The Foundation Company intends to convert its wooden yards into a steel plant, and has contracts totaling \$100,000,000 and more, from the French government, but cannot undertake construction until the federal government approves the foreign contracts.

#### Charges

No dockage charge to ships loading or discharging. Idle ships, or ships loading or discharging ballast must pay dockage (private rates arranged).

Anchorage free to any ship paying the Customs tonnage dues.

Wharfage: Cargoes pay from 25c to 50c per ton on all ordinary general cargoes, lumber, etc. Explosives, \$1 per ton. Cattle, sheep, hogs, horses and automobiles, special arrangement.

Coaling. Done from electric operated bunkers via chutes to ship's holds or bunkers. There is one large bunker situated on west waterfront and owned by the N. P. Ry. Co. Capacity, 16,000 tons. Delivery can be made as fast as can be received up to 500 tons per hour.

F. Water: Supplied by N. P. Ry. Co. at any of their hydrants or dock, \$10 per ship to ship's hose From water boats, ½c per gallon. At private docks, ½c per gallon to ship's hose. Lighterage: See Puget Sound Towage Tariff, supplement No. 1, also for tug boat companies and allied interests. Puget Sound Tug Boat Co., doing all coastwise and ocean towing from Alaska to Panama, have an agency in Tacoma. They are represented by Capt. Frank Andrews, 52 Pacific Cold Storage Bldg., Northern Pacific dock.

#### Wharfs, Piers and Shipvards

Wharfs, Piers and Shipyards

Albers Bros. Milling Co.; Auto-Marine Machine Works; Babare Bros. Shipbuilding Co.; Baker Dock Co.; Balfour Guthrie Co.; Dock No. 1, Dock No. 2—Barlow & Sons, C. S.; Buffelen Lumber & Mfg. Co.; Crowe & Co., F. T.; Clear Fir Lumber Co.; Commercial Dock Co.; C. M. & St. P. Railway Co.—Ocean Dock, Dock No. 2, Milwaukee Elevator; Commercial Lumber Co.; Danaher Lumber Co.; Defiance Lumber Co.; Doud-MacFarlane Machinery Co.; Dodge Mill Co., Ernst; Foss Dock; Fransioli & Co., P. J.; Foundation Co. Shipyards; General Boilers Co.; Glacier Fish Co.; Gregory-Wintermote Mill; Hammond & Co.; Independent Asphalt Paving Co.; Isley Lumber Co.; Island Produce Co.; Kellogg-McConnell Co.; London Dock, U. S. Q. M. Dept.; Municipal Dock; Ticket Office, Baggage Room, Freight Office—Moore & Co., Chas. C.; Milwaukee Elevator Co.; Marine Lumber Co.; North End Lumber Co.; Nor. Pac. Ry. Co., Sound Dock; Bonded Warehouse No. 1, Bonded Warehouse No. 2—Northwestern Woodenware Co.; Northwestern Dock; Old Town City Dock; Point Defiance Park Dock; Puget Sound Lumber Co.; Pacific Steel & Boiler Co.; Pacific Coast Coast Coal Co.; Pacific Steel & Boiler Co.; Parific Coast Copsum Co.; Pacific Fruit & Produce Co.; Ryan Fruit Sound Lumber Co.; Puget Sound Flouring Mills; Pacific Coast Coal Co.; Pacific Steel & Boiler Co.; Pacific Coast Gypsum Co.; Pacific Fruit & Produce Co.; Ryan Fruit Co.; Russell Co., James; Sperry Flour Co.; Savage Scofield Co.; Standard Oil Co. Dock; Standard Chemical Co.; Stevens & Co., Jno. B., U. S. Q. M. Dept.; Seaborn Shipyards Co., Outfitting Dock; St. Paul & Tacoma Lumber Co. Dock; Ship Lumber Mill Co.; Tacoma Smelting Co.; Tacoma Grain Co.; Tacoma Steam Boiler Works, Tacoma Gas Co.; Tacoma Shiphyilding Co.; Tacd Tacoma Gas Co.; Tacoma Steam Boller Works, Tacoma Gas Co.; Tacoma Shipbuilding Co.; Todd Dry Dock & Construction Co.; Vermont Marble Co.; Western Fir Lumber Co.; Wheeler Osgood Co. Saw Mill; Wright Shipyards, Waterway Mill Co.; Wright Repair Co.; West Coast Produce Co.

Northern Pacific Dock: Length 2,100 feet, along the waterfront north from what would be the foot of S. 2nd St. On this dock are three warehouses. Beginning at the south end of the dock, these warehouses are as follows:

Puget Sound Warehouse: Owned and operated by the Northern Pacific Ry. Co. Dimensions 50 feet by 400 feet long. The southerly 50 feet of this building is occupied by the wharf freight office of the Northern Pacific Ry. Co. Exclusive of this the warehouse has floor space of 17,500 square feet. Carrying capacity for warehouse, about 3,000 tons. Warehouse has two stationary slips leading from the front of the dock two stationary slips leading from the front of the dock up into the warehouse. It is served by one track on the inshore side, capacity of which is nine cars. Warehouse is elevated so that floor and platform are on level with floor of cars on track. Depth of water, 30 feet at low

Ocean Warehouse No. 1: Owned by Northern Pacific Ry. Co. Located 250 feet north of Puget Sound Warehouse. Dimensions 80 feet wide by 600 feet long, with a lean-to 25 feet wide, which gives warehouse a total width of 105 feet. Floor space, 63,000 square feet. Carrying capacity, about 12,000 tons.

The southern 250 feet of this warehouse is leased to the Commercial Dock Co., and is known as Commercial Dock No. 2. This dock is the Tacoma terminus for W. R. Grace & Co.'s steamers in their New York and West Coast service; also for the Kosmos S. S. Co. in their service, between this port and European ports. service between this port and European ports

Immediately north of Commercial Dock No. 2, the next 250 feet space is operated by the Northern Pacific Ry. Co. and is used for handling rail business in connection with steamers plying between San Francisco and Puget Sound ports, operated by the Pacific S. S. Co. and the Pacific Alaska. Navigation Co. Also for miscellaneous ocean business.

The remainder of the warehouse building, or northerly 100 feet, is partioned off for a United States bonded warehouse, and is operated by the Northern Pacific Rv. Co.

as such.

The entire warehouse is served by two tracks on the inshore side, and with one track on the water side. Capacity of each track is 14 cars. Warehouse is elevated so that floor and car platform on inshore side are on level with floors of cars on track. Dock and track on water side are on level with warehouse floor.

Dock has accommodations for two large steamers, each section having overlapping privileges. Dock has water

denth of 30 feet at low tide.

Ocean Warehouse No. 2: Located about 75 feet north of Ocean Warehouse No. 1. Owned and operated by the Northern Pacific Ry. Co. Dimensions 120 feet wide by 800 feet long. Floor space 96,000 square feet. Carrying capacity about 20,000 tons. This warehouse is the Tacoma terminus of the Ocean S. S. Co., commonly known as the "Blue Funnel Line" (Dodwell & Co., Ltd., Pacific Coast agents), operating between the United Kingdom and Puget Sound and British Columbia, via the Red Sea and the Orient. Dock has accommodations for two large ocean steamers. Warehouse is served by two tracks on the inshore side and one track on the water side. Capacity of each track, 20 cars. Warehouse is elevated as Ocean Warehouse No. 1. Dock has 30 feet depth of water at low tide.

Northern Pacific Electrical Coal Bunkers: Located on the waterfront between 500 and 600 feet north of Ocean Warehouse No. 2. Structure is 36 feet wide by 416 feet long, and has a storage capacity of 16,100 tons of coal. It is served by two tracks immediately over the bunker pockets, the coal being dumped direct from the cars into the pockets. The bunker stands about 265 feet back from the face of the dock on which delivery tower is built. Coal is conveyed to this tower through an underground tunnel by conveyor buckets, which are elevated by delivery chute to suit the height of steamer receiving the coal. Delivery capacity of bunker is 600 tons per hour. Depth of water outside tower, 30 feet at low tide. Can now supply ships of any size.

Tacoma Grain Company: Adjoining the bunkers on the west with a frontage of 730 feet, are the elevators and mill of Tacoma Grain Co., with a storage capacity of 21,000 tons of wheat and cereals. The buildings are built on solid ground and set back from the water front about 100 feet. Two mooring docks and towers on the waterfront are connected with the buildings by an overhead viaduct. Products handled by belt conveyors with a loading capacity of 125 tons per hour each; depth of water at low tide, 40 feet.

Sperry Flour Company: Joining the Tacoma Grain Co. on the west with a frontage of 800 feet, are the elevator and mill of the Sperry Flour Co. with a storage capacity of 40,000 tons of wheat and cereals. The the water front about 100 feet. Two mooring docks and towers on the waterfront are connected with the buildings with an overhead viaduct. Products handled by belt conveyors with a loading capacity of 60 tons per hour each; depth of water at low tide, 30 feet.

Puget Sound Flouring Mills Company: About 425 feet west of the Sperry Flour Co. are the elevator and mill of the Puget Sound Flouring Mills Co. On the water front are the warehouses of about 800 feet frontage. The mill and warehouse are connected by an overhead viaduct. Total storage capacity of about 16,000 tons. Loading capacity about 200 tons per hour. Two conveyors. Depth of water at face of dock, 28-30 feet at low tide.

Commercial Dock No. 1: Located at and running south from Commercial Dock Bridge. Owned by Northern Pacific Ry. Co. and leased to the Commercial Dock Co. Dock is 700 feet long and has water depth of 30 feet at low tide. Dock carries warehouse 125 feet wide by 600 feet long, with floor space of 75,000 square feet. It is served by a depressed track on the inshore side with a capacity of 11 cars. Dock has six slips, three of them gear and three of them floating, so that cargo

can be handled to and from steamers at any stage of the tide. Dock is so arranged that teams can enter warehouse and handle freight direct, or can work at platform on inshore side of warehouse. Dock is equipped with crane for handling heavy machinery or other articles. This is the Tacoma terminus of the Pacific S. S. Co.'s service with California ports, and of the Border Line Transportation Co., which maintains a service to Victoria and Vancouver, B. C., also of the Canadian Pacific Ry. from Vancouver, B. C., by steamer Morning Star. It is also the Tacoma terminus of steamers operating to and from Alaska ports.

Northern Pacific Sound Dock: Located just north of Commercial Dock No. 1 and has a water depth of 35 feet at low tide. It has a warehouse floor space of 25,000 square feet, with an overlapping privilege for berthing, which will accommodate any ocean-going steamers. It is served with a depressed track on the back of the house and water track on the face, enabling them to handle lumber to advantage direct from cars to ship. This dock is used as the Tacoma terminal for W. R. Grace & Co. in their New York and West Coast service; also for the Kosmos S. S. Co. to European

Baker Dock: Located 50 feet south of Commercial Dock No. 1. Owned by Northern Pacific Ry Co., and leased to the Baker Dock Co. Has a water depth of 30 feet at low tide. Carries a warehouse 125 feet wide by 400 feet long, with a floor space of 49,500 square feet. Warehouse is served by one track on the inshore side, with a capacity of nine cars. Warehouse is slevated so that the floor and platform between it and is elevated so that the floor and platform between it and track are on level with floors of cars on track. There are two stationary slips reaching from front of dock

up into warehouse.

The Pacific S. S. Co. have 10 steamers each week running regularly between Tacoma and California ports.

The American-Hawaiian S. S. Co. have a steamer

scheduled for sailing every five days from Hawaiian Islands and New York.

The Matson Navigation Co. have a steamer every 12

days for Hawaiian Islands.
The Charles Nelson Line has a steamer each week carry-

The Charles Nelson Line has a steamer each week carrying freight from San Francisco only.

Balfour Dock: Located about 40 feet south of Baker dock. Owned by Northern Pacific Ry. Co. and leased to Balfour, Guthrie & Co. Dock is 1,100 feet long and has a water depth of 27 feet at low tide. It carries a warehouse 125 feet wide by 1,100 feet long, with a floor space of 137,500 square feet. Warehouse is served by two tracks on the inshore side each having a capacity by two tracks on the inshore side, each having a capacity of 23 cars. Warehouse is elevated above level of tracks, the same as Eureka dock. It is equipped with one floating slip, so that cargo can be delivered to or taken from steamers at any stage of the tide. About 100 feet width on the inshore side of warehouse is built on solid ground, with tonnage capacity limited by space alone. The side of warehouse outside of this is built over the water, and carrying capacity limited to 800 pounds to the square foot.

Balfour, Guthrie & Co. are agents for the Harrison line of steamers, which operate between European ports and ports on the west coast of North America. These steamers have no regular schedule, but average about one a month. Dock has grain cleaning plant with daily capacity of from 700 to 1,000 tons, and with storage bin capacity of 600 tons bulk grain. The Charles Nelson Co. and Matson Navigation Co. also use this dock.

London Dock: Located immediately south of and adjoining Balfour Dock. Owned by Northern Pacific Ry. Co. Has water depth of 27 feet at low tide. Dock carries a warehouse 125 feet wide by 400 feet long, with a floor space of 49,500 square feet. The carrying capacity of about three-quarters of this space, towards the back, which is built on solid ground, is only limited by the space; that of the balance of the floor space is limited to 800 pounds to the square foot. Warehouse is served by two tracks on the inshore side, each with a capacity of nine cars. Warehouse is elevated above level of tracks, the same as Eureka dock. Warehouse is equipped with grain cleaning plant, having a bin capacity of 500 tons. Northwestern Dock: Located immediately south of and adjoining London Dock. Owned by Northern Pacific Ry. Co. Has water depth of 27 feet at low tide. Dock carries a warehouse 125 feet wide by 360 feet long, with a floor space of 45,000 square feet. The carrying capacity of about three-quarters of this space, towards the back, which is built on solid ground, is limited only by the space; that of balance of floor space is limited to 800 pounds to the square foot. Warehouse is served by one track on the inshore side, with a capacity of seven cars. Warehouse is elevated above level of track the same as Eureka dock.

Dock is equipped with one gear slip, so that cargo can be handled to and from steamers at any stage of the tide. The Northern Grain & Warehouse Co. use this dock and

warehouse for their own grain business.

Chicago, Milwaukee & St. Paul Railway Co.: Company operates two docks, one of which is 175 feet wide by 940 feet long, the other is 175 feet wide by 1,000 feet long. Dock is served by an unobstructed waterway leading out of the bay, 215 feet wide, by 2,000 feet long, and has a depth of 35 feet at low tide and 51 feet at high tide, which gives ample depth for any trans-Pacific vessels. Two tracks on the waterside run the full length of the dock for handling freight direct from car's to steamer. A submerged track running through the center of the dock for a distance of 440 feet, which permits unloading or loading shipments into warehouse at

very little expense.

On the land side of the docks there are four tracks running the full length of docks, also used for loading and unloading. In addition to the dock proper there is a platform extending beyond the dock for a distance of 360 feet, which gives a frontage of 1,300 feet and makes it possible to handle four to five steamers at the same

Milwaukee Grain Elevator: Operated by Milwaukee Elevator Co. On the north side of the waterway is the grain elevator, 500 feet long and 175 feet wide with additional dock front of 100 feet. This elevator has a capacity of 106,000 bushels of bulk grain and 994,000 bushels of sacked grain with additional track storage for 250 cars. The elevator is modern in equipment and capable of loading to vessels at the rate of 7,000 bushels per hour. Thirty-five feet water at low tide.

Three hundred feet to the east is the lumber dock, 500 feet long and 200 feet wide with a yardage capacity of 200 cars

In addition to this there is a lumber dock which can accommodate as many as four vessels at one time, but to permit loading the four at the same time, it is necessary to load one at each end and two along side.

In addition to the above the company also maintains a gridiron and transfer bridge with adjustable apron, used for making delivery of carloads to barges plying between various Sound ports.

Rates for wharfage, storage, etc., are the rates in effect

at Seattle.

Company exchanges with any and all steamers arriving at the Port of Tacoma.

Foreign Consuls

British: John F. Lyon, 602 National Realty Bldg. Chilean: Luis A. Santander, 129 Perkins Bldg. France: A. C. Marconnier.
Guatemala: J. T. Steeb, Tacoma Bldg.
Norwegian: Ole Granrud, 408 Berlin Bldg.

Exporters and Importers
American Trading Co., Pacific Coast, 2133 Commerce

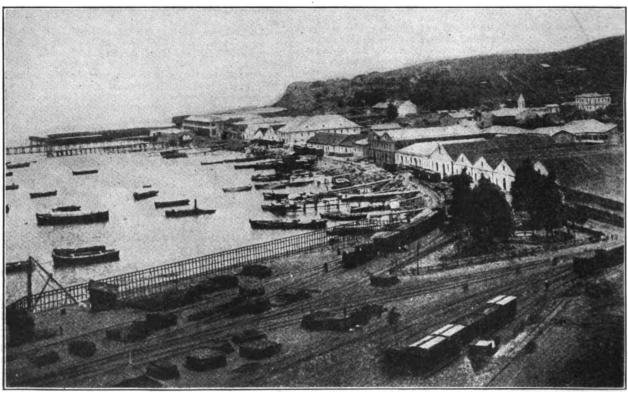
Balfour, Guthrie & Co., 308 Perkins Bldg. Hans Heidner, Perkins Bldg. Thomson & Stacy Co., Berlin Bldg.

### TAKAO Formosa

Position: Latitude 22 degrees 4 minutes north, longitude 120 degrees 2 minutes east.

Population: 16,000.

Accommodation: Entrance 26 feet, channel to inner har-bor 24 feet, area, 140 acres. ST. rises 4 feet. From May to October anchorage outside is not safe. The harbor has a 3,000-foot quay wall, two 15-ton and ten 2-ton cranes. Fresh water, 40 tons an hour at wharf, 15 sen per ton.



Waterfront at Taleahuane, Chile

Port Charges: Tonnage dues, 5 sen per reg. ton. Commutation, 20 sen per annum. Buoys and cranage free; electric power, yen 1.86 per hour. Coolies on board, 24 sen per ton cargo. Lighterage, 80 sen per ton, and coolies discharging to wharf, 50 sen per ton.

Imports: Cement, machinery, fertilizers, flour, cotton,

tissues, drugs,

Exports: Sugar, rice.

Takao is a treaty port, and is located on the southwestern coast.

# TALCAHUANO (Concepcion Bay)

The best harbor on the Chilean coast.

Talcahuano is the largest port of the province of Concepcion and lies on a bay of the Pacific Ocean of the same name. The shipping is of considerable importance as it carries the commerce of Concepcion, the capital of the province

Position: Latitude 36 degrees 42 minutes south, longi-

tude 73 degrees 5 minutes west.

Population: 16,000.

Pilotage: Compulsory, \$60 currency in and out.

Port Charges: Mooring and unmooring, 3 cents c. cy.

Stevedoring: Rates for loading cargo, coal, 80 cents c. cy. per ton. Overtime, \$1. Cost for general labor, \$9 day.

Accommodation: Anchor in 6 fathoms, one-third mile. Steamers discharge 700 to 800 tons daily. Weights to 40 tons lifted. Well protected from winds. Steamers stopping 48 hours obliged to moor. Custom house mole has 8 cranes, 2 tons each, one lifting 30 tons. Other moles. Imports: Coal, machinery and merchandise. Exports: Mineral products, gold, silver, copper, manganese chinchilla skins.

ese, chinchilla skins.

Steamer Lines Using the Port: P. S. N. Co., C. S. A. V., Straits Service.

Government owns two drydocks and one floating dock. Dimensions of drydocks, 600x70x30 feet, 800x116x36 feet. Floating dock, 216x42 feet.

### **TALTAL** Chile

Position: Latitude 25 degrees 25 minutes south, longitude 70 degrees 39 minutes west.

Population: 12,000.

Stevedoring: Rates for loading cargo, \$12 per 1,000 qntls. Overtime cost per hour, tonnage system, \$1.10 per ton. General labor, \$8 to \$9 per day.

Accommodation: Anchorage in 10 fathoms, half-mile out. A mole, several cranes and fair facilities for load-

ing and unloading; 200-250 tons unloaded daily.

Imports: Coal, general merchandise. Exports: Nitrates, metals, copper. Steamer Lines Using the Port: P. S. N. Co., C. S. V.

A., other lines come, but irregularly.

## **TAMSUI**

Position: Latitude 25 degrees 5 minutes north, longitude 121 degrees 2 minutes east.

Population: 6.000.

Pilotage: Under 1,000 tons gross, 28 yen, inwards and outwards; over 1,000 tons gross, max. 36 yen; 4 yen additional at night.

Port charges: Harbor dues, 5 sen reg. ton. Consular fees, 6.25 yen. Commuted harbor dues for one year may be paid, 20 sen reg. ton. Wharfage, no charge. Discharging kerosene and packages of same size, 1 sen; larger, in proportion, 8c per ton for coolie hire on board; heavy goods, 10c per ton.

Accommodation: Most modern facilities in the island, Vessels anchor in river as anchorage off harbor is unsafe. HW. on bar, 15 feet NT. Cargo is unloaded on lighters in stream; 1,000 ton vessels can discharge at wharf. Fresh water, 3\(\frac{1}{2}\)d. ton.

Imports: Oil cake, machinery, kerosene, piece goods,

flour, opium

Exports: Sulphur, camphor, tea, rice.
Largest port of Northern Formosa, at entrance of Tamsui river.

## TANDJONG-PRIOK

#### Island of Java. Dutch East Indies

Position: Latitude 7 degrees 4 minutes south, longitude 112 degrees 44 minutes east. Population: 188,550.

Pilotage: Compulsory. Vessels of 1,500 cub. meter, fl. 5; every additional 1.000 cub. meter fl. 5 inwards or

Outwarde

Port Charges: Buoy dues, fl. 3 for each buoy per 24 hours. Quay dues, fl. 0.04 per meter for each hour. Wharf dues, fl. 0.03 per meter for each hour. Light dues and Dutch Harbor and anchorage dues, fl. 0.16 per M3. per 6 months, to be paid at the first port of call; valid for all ports. Customs, fl. 20 (night and holiday permits) for each gate where cargo is being handled.

Stevedoring: Loading cargo, fl. 0.45 per ton of 40 cubic feet (day), fl. 0.65 per ton of 40 cubic feet (night). Discharging cargo and stowing in godown, fl. 0.80 per ton of 40 cubic feet (day) fl. 1.20 per ton of 40 cubic feet (night). 5% to be deducted from the total amount and an allowance of 20% is made on the quantity of cargo for broken stowage. Lighterage, fl. 1.50 per ton of 40 cubic feet from Batavia (outward), fl. 1 per ton of 40 cubic feet from Tandjong-Priok (outward). Cost per day for general labor, fl. 1 per man.

Accommodation: The port of Tandjong-Priok is in communication with Batavia by railway and by canal. The outer harbor is formed by two piers 1,850 metres long, the entrance is 125 metres wide and the depth is 8 metres. The inner harbor has a quay 1,100 metres long and 175 metres wide, the water has a depth of 7½ There are extensive accommodations for coalmetres. ing. The new harbor is practically completed with quay space for about 10 large steamers.

Dry Dock: Length of dock 324 feet, breadth in the clear 67 feet, maximum draft 22 feet, dead-weight listed 4,000 tons. Floating dock, which can be tilted to examine a propeller should the vessel be heavier than 4,000 tons deadweight. The dock is situated in the harbor of Tandjong-Priok and is provided with the required buoys to ensure safe mooring. The workshops in connection with the dock are suitable for all the usual repairs to steam and sailing vessels. Foundry capable of turning out castings up to five tons. A large stock of material always on hand. 25-ton crane on the premises.

Imports: Provisions, cotton goods, fancies, machinery, etc.

Exports: Tea, rubber, cocoa, damar, hides, fibre, pepper, tin, citronella oil, tapiocas, etc.

Steamship Lines Using the Port: Stoomvart My. "Nederland" and Roterdamsche Lloyd to Holland and New York; Ocean S. S. Co. Ltd. and China Mutual S. N. Co. to United Kingdom; Java-China-Japan Line to China, Japan and San Francisco; Nanyo Yusen Kabushiki Kaisha Ltd. to Hongkong and Japan; Koninklyke, Paketvaart Maatschappy in the N. I. Archipelago, Singapore, Penang, and Australia.

Consular Representation: All the principal powers. Names of Import and Export Firms: Import-Maatschappy voor Uitvoer en Commissiehandel, Burt Myrtle & Cc., Geo. Wehry & Co., Indische Handels Co. Export—Amsterdam Batavia Handelsvereeniging, Maclaine, Watson & Co., Boasson & van Overzee.

### **TAURANGA** New Zealand

Customs port 146 miles distant from Auckland.
Position: Latitude 37 degrees 36 minutes south, longi-

Port charges. Vessels, 1½d per net reg. ton per day; goods, inwards and outwards, 1/ per ton. Harbor rate, 3d per ton landed on wharves. Berthage, ½d per ton per day.

Accommodation: Landlocked harbor, with a depth of 19 feet LW. at entrance. Depth at man-o'-war anchorage, 6½ fathoms LW. Vessels drawing 16 feet can cross sandspit in harbor at high tides, and berth at either of two wharves

Imports: General.

Exports: Dairy produce, flax, fish, maize, fruit.

### **TIENTSIN**

Position: Latitude 39 degrees 7 minutes 3 seconds north, longitude 117 degrees 12 minutes 34 seconds west.

Population: 950,000, including suburbs.
Pilotage: Not compulsory but advisable. Outside bar to inner anchorage at Taku, \$3.13 per foot per sailing vessels. Steamer or vessels in tow, \$2.50. Inner anchorage at Taku to Tientsin, \$3.75 for sailing vessels; steamers \$3.13.

Port Charges: Tonnage or wharf dues, Mex. \$0.041/2 per reg. ton mooring fees at Bund; \$35 per vessel Bund rent. River dues 1/5 per cent H. K. \$0.20 per ton. Tonnage dues, vessels under 150 tons register H. K. \$0.20 per ton, vessels over 150 tons register H. K. \$0.80

\$0.20 per ton, vessels over 150 tons register H. K. \$0.80 per ton. Other charges, night permits and Sunday permits, 6 p. m. to 6 a. m. H. K. \$20.

Accommodation: Wharves occupied only by coasting vessels. Two dry docks for lighters only, steamers would have to be beached for repairs. Vessels over 300 feet in length can only reach TongKu. Highest high water during 1916 on Taku bar 18 feet 9 inches; lowest high water during 1916 on Taku bar 13 feet 9 inches. high water during 1916 on Taku bar 13 feet 9 inches.

Imports: Piece goods, gunnies, timber, flour, rice, oil,

hardware, machinery.

Exports: Wool, skins, furs, bristles, strawbraid, lin-

Names of Importing and Exporting Firms: Jardine, Matheson & Co. Ltd., William Forbes & Co., Mackenzie & Co. Ltd., Wilson & Co., Collins & Co., Liddell Bros. & Perrin, Cooper & Co.

Steamer Lines Using the Port: Indo-China S. N. Co. Ltd., China Navigation Co., The China Merchants S. N. Co., Nippon Yusen Kaisha, Osaka Shosen Kaisha; Shanghai, Chefoo, Dairen, Tsingtau, Hongkong, Canton, Swatow, Kobe, Yokohama.

Consular Representation: British, French, Italian, Japanese, United States, Belgium, Netherlands, Norway, Portugal, Russia, Spain, Sweden, Denmark.

Distance from Taku bar to Tientsin, 36 miles by river. Distance from Taku bar to Tientsin, 30 miles by river. Distance from Taku bar to TongKu, 14 miles by river. The winter here is very severe, heavy ice forming in the Gulf of Pe Chili. Vessels coming to this port in the winter must always be liable to encounter ice. Chinwangtao is considered an "icefree port" and can berth vessels of 18 feet draft. The River Pei Ho is considered closed by ice from about December 15 to end of February.

#### Taku Bar and Tientsin Achorage

Vessels of 24 feet draft may lie nearly in their own draft of water about 8½ miles from the forts, the mud being very soft, so that they could ground at L. W. The best position is at that distance, S. E. by E. of the South Cavalier, about 4½ miles from the bar. The holding ground is excellent. The anchorage is a wild one in winter; at that period ships cannot anchor there

at all owing to the ice. Sometimes vessels anchor in their own draft of water, for the mud is very soft, and if the water sets in from seaward the level of and it the water sets in from seaward the level of the sea is raised, whilst with off-shore winds, the sea is always smooth. The difference between the level of H. W. spring tides with a southeasterly wind, and L. W. springs with a northwesterly wind is 12½ feet, the spring rise being 10 feet.

#### Tides

It is H. W. F. & C. at the bar at 3h. 30m.; spring rise about 10 feet, neaps 7½ feet. The actual time of H. W. sometimes varies as much as 1½ hours from the computed time, but seldom at springs. As soon as the flats are covered, the stream sets across the bar along the coast nearly parallel thereto, the flood running north-ward, the ebb southward, about 2 knots at springs and one knot at neaps. On the bar the stream is always weak. The influence of the direct tides in and out is not felt on the bar except towards L. W., when the stream is confined within the mud banks. Outside the bar is confined within the mud banks. Outside the bar the flood sets north, the ebb S.S.E. The tides are subject to great irregularities. North and N.W. winds retard the flood and diminish its rise; east and S. E. winds increase the rise and retard the ebb. Slack water some-

times lasts 3 to 4 hours at neaps.

At Tientsin, H. W. is, on an average, 3½ to 4 hours later than at Taku bar. The tide takes from 3 to 4½

hours to rise.

A considerable strength of flood may be expected in the Tientsin reach until the freshets commence in August, the flood running from 2 to 3 knots at springs, while the rise and fall is from 5 to 6 feet. At neaps the flood is weaker and the rise and fall from 3 to 4 feet.

When there is flood tide in the Tientsin reach the following signals are shown from a crane near the head of the signal mast at harbor master's office: by day, a black ball 4 feet in diameter, and by night a red

#### Harbor Regulations

1. The term "vessel" in these regulations refers to vessels of foreign type. Regulations concerning native type craft are embodied herein only insofar as is necessary for their due control when working in connection with foreign type vessels. They are regulated in other respects by special notifications.

2. The control of the harbor authorities of the Port

of Tientsin extends from above the International bridge to three miles to the eastward of the 12-foot contour

of the Taku bar.

#### Anchorages

3. The anchorages for foreign-type are: (a) For vessels other than those provided for in (b)

and (c):
At Tientsin, from the International bridge to the lower end of the Belgian concession.
At Tangku, from the upper end of the China Merchants Steam Navigation Company's wharf to the North

Outside the bar, from the 12-foot contour to three miles to the eastward of it.

N. B.-When vessels are of too deep a draft to enter the channel across the bar, or when they have only passengers to land, or a trifling amount of cargo to handle, they may obtain special permission to work outside the Taku bar on application in writing to the Commissioner of Customs through their agents.

(b) For explosives, in Powder Reach, Tangku, or outside Taku bar and clear of other shipping.

(c) For quarantine purposes, outside the bar.
4. Vessels entering the harbor will be boarded by an officer deputed by the harbor master, who will direct them to proper berths.

5. Swinging berths shall be kept clear of craft in order to be always available for use.

6. Vessels shall moor in accordance with instructions from the harbor master, and shall not shift their berths without a special permit, except when outward bound.

7. Application for berths or for permission to shift must be made at the harbor master's office at Tientsin or at Tangku, according to the anchorage in which the vessel concerned is berthed, and the necessary in-structions concerning the berth will be given. If a vessel be instructed by the harbor master to shift its berth, it shall do so.

#### Navigation Rules

8. For a distance of 1.500 feet on either side of the center line of the Bar channel from 11/2 miles to sea-ward of the Outer buoy to the Deep hole, the provisions of the Navigation Rules (A), given herein, are to be

9. From the Deep hole to Tientsin the Special Navi-

gation Rules (B), given herein, are to be observed.

10. The provisions of the International Regulations for Preventing Collisions at Sea are operative in the Haiho and its approaches except insofar as they are modified by the Special Navigation Rules referred to in Article 8.

11. In Tientsin a vessel must not leave her berth

or attempt to swing round while another vessel is

passing through or entering the anchorage.

12. Vessels are forbidden to go at such speed in the river as renders their wash dangerous to steamers lying alongside the bund or wharves, or to properly laden cargo boats and sampans. When properly authorized slow boards are erected (or an International Code Signal to the same effect is made), vessels must go at such speed only as is necessary to keep them under command

The erection of slow boards is compulsory for all stationary points at which slow speed on the part of steamers is desired, such as wharves and pumping

stations.

#### Munitions

13. Vessels arriving at this port and having on board as cargo dynamite or other explosives, in whatever quantity, loaded shells, more than 100 pounds of gunpowder, any quantity of fixed ammunition in excess of 20,000 rounds or the aggregate powder charges of which exceed 100 pounds, and vessels having received on board as cargo any of the aforesaid articles must either anchor outside the Bar clear of shipping, or in Powder Reach above Tangku, and remain there until special permission has been granted to discharge or to leave their moorings, and such explosives must be stored in the Government Explosive Godowns off Powder Reach if not moved within 48 hours.

14. Every craft, of whatever description, conveying explosives or dangerous or inflamable goods through any part of the port shall exhibit a red flag by day and a red light at night where it can best be seen, at a height of not less than 12 feet above the highest part

of the deck or house.

#### Infectious Diseases

Vessels having any infectious disease on board. or any disease suspected to be infectious, or the body of a person who died or is suspected of having died of an infectious disease, shall, as provided for in the Quarantine Regulations, on approaching the port, hoist the Quarantine Flag, anchor as provided for in Article 3, (c), and keep the flag flying until pratique has been granted.

#### Conservancy

16. No hulks or pontoons may be moored, piles driven, wharves or jetties built, reclaiming or other riparian work commenced, or encroachment made on the waters of the river, or on the mouths of the creeks flowing into the river, before plans have been submitted to the harbor authorities and permission given by them, after consultation with the Haiho Conservancy Board.

17. No buoy shall be laid down without the sanction

of the harbor master and his approval of its moorings. Unoccupied buoys must be lighted from sunset to sun-

rise.

18. All buoys shall be subject to the control of the harbor master, and, when they are so placed as to obstruct the passage of vessels or are not moored in such a way as to economize berthing space, the harbor master shall be at liberty to order them to be shifted. In case of refusal or neglect on the part of the owners of a buoy to shift its position as directed by the harbor master, the latter may cause it to be removed at the cost of the owners.

19. Ballast, ashes, garbage, refuse, spoil obtained by

dredging or otherwise, etc., must not be thrown into the river. Vessels wishing to discharge ashes or other refuse should hoist the International Code Flag Y at the fore truck, when a licensed ash boat will attend

and take delivery at a fixed tariff.

20. In the case of wrecks within the harbor or in the approaches to the port which form a danger to navigation; if no active steps for removal have been taken within a reasonable time, as specified by the harbor master, the wreck will be removed or destroyed by the Marine Department of the Customs.

#### Miscellaneous

21. The blowing of steam whistles or sirens, except for the purpose of signalling in accordance with the Regulations for Preventing Collisions at Sea, or for the purpose of warning vessels of danger, is strictly forbidden.

22. All vessels shall keep on board a sufficient number of hands to clear and pay out chain and to slack

off mooring lines when steamers are passing.

23. Vessels of all descriptions lying at their mooring must have their anchors buoyed. Should the anchor in any way obstruct the fairway, it must be shifted to allow vessels to pass in safety.

24. No vessels except men-of-war may use swinging booms. Swinging booms should be rigged in from

sunset to sunrise.

25. Vessels are not to have lines out to buoys, wharves, or other vessels any longer than is necessary when shifting their berths.

26. No merchant vessels shall fire cannon or small arms within the waters of the port. Men-of-war are requested not to fire salutes within the Tientsin anch-

- orage.

  27. Lighters and other boats are not to be made fast to vessels in such a manner or in such numbers as to interfere with the free passage of other boats or vessels through the harbor. Towboats will not be allowed to tow more than two lighters in the river at one time, and such vessels must not be towed abreast of each other.
- 28. In case of fire occurring on board a vessel in port the fire bell must be rung immediately by that vessel and by those above and below her, and the signal N H, International Code ("Fire; want immediate assistance"), hoisted by the burning vessel, if possible, and by those above and below her, during the day, or the light lowered and hoisted continually during the night. Notice should immediately be given to the Harbor Office.
- 29. Any person infringing these regulations may be prosecuted before the national authority concerned.

#### Navigation Rules

- (A) Operative on the Bar Channel The following rules are operative for a distance of 1,500 feet on either side of the center line of the Bar Channel from 1½ miles to seaward of the Entrance Buoy to the Deep Hole.
- 2. Vessels arriving and awaiting the rise of the tide in the channel are to anchor well clear of the entrance and to guard carefully against obstructing the view of the channel marks.
- 3. Masters and pilots of vessels must not attempt to pass through the channel until the Customs Tide signals show a depth corresponding to or greater than the actual draft of the vessels desiring to enter.



- 4. On approaching the channel, steamers and tugs must give one long blast on the whistle. Should any of the tugs or dredges engaged in the channel work reply by a succession of short blasts from their whistles or exhibit a red flag, the channel is not on any account to be entered. Vessels which have been so warned not to enter the channel will be informed by signals as soon as the channel is navigable. Both the master and pilot concerned will be held responsible for any infraction of this rule.
- 5. Should a vessel get aground in the channel, the master or pilot in charge must report in writing to the Harbor Master without delay, specifying bearings of known objects, time of grounding, draft of steam-er, depth of water signalled at the signal mast at the time of grounding, etc., and must take prompt steps for lightering if called upon to do so. Lighters are to be placed on the side farthest from the center of the channel, weather permitting, and must be promptly shifted or removed at the request of the Channel Officer. Anchors must not be laid out in the channel unless absolutely necessary, and, if laid, they are to be buoyed; vessels may be called upon to remove such anchors if they in any way obstruct the traffic.
- 6. A tug is not allowed to have more than one vessel in tow.
- 7. Steamers and tugs, while in the channel, must maintain a distance of not less than 2½ cables when following one another, must keep well clear of raking tugs and dredgers in the channel, and must entirely conform with any signals of such vessels.
- 8. Shipmasters and pilots must state the correct draft of their vessels to the Channel Officer if called upon to do so.

-It is strongly recommended that vessels crossing the bar shall employ licensed pilots for the greater safety of navigation.

### **TIMARU** New Zealand

Position: Latitude 44 degrees 23 minutes south, longitude 171 degrees 17 minutes west.

Population: 13,000.

Pilotage: Compulsory. Rates, steamers, 2d inwards and outwards; sailing vessels, 3d. per ton inwards and outwards, 2d if tug is used.

Port charges: Coasters, 1½d per ton per trip; others, sailing vessels, 3d. Steamers, 6d per ton on weight or measurement at Board's option on all cargo loaded or discharged. Usage of hawsers at wharves, ½d per ton per ton reg., after 3 days, ¼d. Vessels are charged 3d per ton on all cargo landed or shipped at wharves; outside berths or at moorings inside breakwaters, one half. Lights, dd per ton reg. for steamers; sailers, 6d; coasters, ½d; inter-colonial sailers, 4d. Towage, to or from sea, 100 tons reg. £1 10s, and 10/ per 50 tons up to 500 tons, then 5/ per 50 tons; beyond three miles, 1d per ton reg. per mile. Removals, within harbor, £1 when for benefit of vessel up to 150 tons reg., and half sea towage for every additional 50 tons. additional 50 tons.

Accommodation: Artificial harbor; very deep and will accommodate the largest battleship afloat. There is a 2,278-foot concrete breakwater on the southeast side, with a 2,400-foot mole on the west side. There is another mole 3,450 feet in length on the southeast side. Berthage space aggregates about 3,300 feet, with 30 feet of water at low water spring tide. Vessels up 12,234 tons can be accommodated at wharves,

Imports: General, timber, coal,

Exports: Wool, grain, grainstuffs, frozen meat.

Timaru is a flourishing port in South Canterbury and handles the products of the most extensive agriculture and pastoral district in New Zealand. Some of the largest flour mills in Australia are located in the vicinity.

### **TJILATJAP** Island of Java. Dutch East Indies

Position: Latitude 7 degrees 7 minutes 2 seconds

north, longitude 109 degrees east.
Population: 295 Europeans, 15,060 natives, 894 Chinese.

Pilotage: Not compulsory, Pilotage is calculated upon the vessel's draft in decimetres, different rates upon the vessel's draft in decimetres, different rates applying to sailing vessels, vessels towed and steam vessels. Rates are for vessels drawing 17 decimetres and less, fl. 20 for sailers, fl. 19 for vessels towed and fl. 18 for steamers, and increase for vessels drawing 63 decimetres to fl. 169 for sailers, fl. 152 for towed vessels and fl. 135 for steamers. All vessels moved by mechanical power are considered "steamships" for the purposes of this tariff.

Port Charges: 16 cts. per M3 for six months. Tonnage or wharf dues, 1 ct. per reg. ton per day, not exceeding four days.

stevedoring: Rates for loading and discharging cargo, 30 cents per ton, piece goods; 50 cents per ton, heavy iron. Overtime cost per hour, double tariff. Imports: All kinds of goods.

Exports: Sugar, copra, tapioca, hides, tobacco, rubber,

oil cakes.

Names of Importing and Exporting Firms: M. U. H., McNeill & Co., Rouwenhorst Mulder, George

Wehry, Hermann Marsman, Kwih Hoo Tong.
Steamer Lines Using the Port: Ross Lloyd, N. Y.
Nederland, S. S. N. Y. Ocean, D. A. D. G., Nord
Deutsche Lloyd, Java-China-Japan Line; Amsterdam, Rotterdam, London, Liverpool, Hongkong. Consular Representation: French consul.

Three big steamers can lay alongside the wharf.

# TOCOPILLA

Position: Latitude 22 degrees 13 minutes south, longitude 70 degrees 14 minutes west.

Population: 6.000.

Stevedoring: Rates for discharging cargo, 15d. general cargo. Overtime cost per hour, \$2 C. Cy. Cost for general labor, \$9 C. Cy. per day.

Accommodation: Vessels can anchor in about 12

fathoms, short distance from shore. Steamers can discharge about 150 tons and load 500 tons daily

Imports: Rice, coal, machinery, merchandise.

Exports: Nitrate of soda, ores, mineral products.

Steamer Lines Using the Port: P. S. N. C., C. S. V. A.

Shipping is protected from south winds by Algodon Point, a rugged cape which runs out about a mile into

### **TOWNSVILLE** Queensland, Australia

Position: Latitude 19 degrees 15 minutes south, longitude 146 degrees 48 minutes east.
Population: 20,000.

Population: 20,000.

Pilotage: Same as Brisbane.
Accommodation: The depth of water alongside the wharves is 26 feet. Goods-shed accommodation for inward and outward cargo is available, and additional wool stores are being erected near the wharf. Frozen beef is railed direct from the Meat Works (of which

Port charges: State dues same as Brisbane. Berthage, 1/4d. per ton per day or part of a day on gross tonnage; a day is calculated as 24 hours from time of arrival. Water, 4/- per 1000 gallons taken at wharf.

Stevedoring: Discharging, from 3/9 to 5/6 per ton. Loading, from 3/6 to 6/6 per ton.

Townsville is situated on the east coast of the state on Cleveland Bay, at the mouth of Rose Creek. The city is 870 miles north-west of Brisbane. Considerable

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improvement work, with the addition of two long breakwaters, has been carried on in the harbor. The largest vessels may enter with complete safety.

**TSINGTAU** 

Position: Latitude 36 degrees 5 minutes north, longitude 120 degrees 18 minutes east.

Population: 60,484.

Pilotage: Compulsory, but free.

Port Charges: Tonnage or wharf dues, 1 cent Mex. per reg, ton per diem. Customs, nil. Light dues, nil.

Other charges, nil.

Rates for loading and discharging Stevedoring: cargo, 14 cents Mex. per ton. Overtime cost per hour, 20 per cent extra. Cost per hour for general labor, about 5 cents Mex. Lighterage, cost per ton, nil. about 5 cents Mex. Lighterage, cost per ton, nil. Lighterage, cost per lighter per day, nil.

Accommodation for about 12 yessels alongside fine,

granite-faced, solid quays. Draft of water at lowest tide 28 feet. Cargo is discharged into, and loaded from, massive concrete warehouses, built on the wharves. The harbor is well sheltered, and offers excellent cargo working facilities. The quays have direct connection with the railway, and heavy lifts may be discharged into trucks that are brought alongside vessels.

Imports: General.

Exports: Groundnuts, groundnut oil, strawbraid, silk, hides, cotton, bristles, cattle.
Names of Importing and Exporting Firms: Jardine, Matheson & Co. Ltd., Cornabe, Eckford & Co., Mitsui Bussan Kaisha Ltd., Suzuki & Co., F. J. Bardens, Zijl-

Steamer Lines Using the Port: All China coast lines, also direct lines to Kobe, Japan. No regular calls by ocean liners; were stopped by the war. The Asiatic Petroleum Co.'s and the Standard Oil Co.'s tank steam-

ers call fairly regularly to discharge oil.

Consular Representation: Great Britain, States, Russia, but these consuls are not officially recognized, as this territory is under the administration of the Japanese military authorities since the surrender of the German garrison to an Anglo-Japanese force. Trade is carried on, but it is impossible to say if it will regain its former magnitude until the status of Tsingtau is decided at the conclusion of the peace conference. A Chinese custom house is established here china tariff. A railway, 270 miles long, runs through to Tsinanfoo, the capital of the province of Shantung, where it connects with other rail lines from Shanghai and Tientsin.

## UNALASKA (Aleutian Islands) Alaska

Latitude 53 degrees 54 minutes north, longitude 166 degrees 24 minutes west.

Distance from Seattle, 1,727 miles.

Population, 500.

Harbor: Located on the famous Dutch Harbor, a fine Protected harbor with good anchorage.
Steamship Lines: Irregular service. Write to Pacific S.
S. Co. or Alaska S. S. Co., Seattle, for details.
Wharves: One, owned and operated by Alaska Com-

mercial Co.

### **VALDEZ** Alaska

Latitude 61 degrees north, longitude 146 degrees 20 minntes west.

Distance from Seattle, 1,263 miles.

Population, 2,000.

Harbor: Located at the northeast corner of Prince Wil-

liam Sound, on Valdez Inlet.
Steamship Lines: Alaska S. S. Co., Pacific S. S. Co. Wharf: Owned and operated by Valdez Dock Co.

### **VALPARAISO**

Position: Latitude 33 degrees 1 minute south, longitude 77 degrees 37 minutes west.

Population: 200,000.

Pilotage: Not compulsory, but by custom of port it

Pilotage: Not compulsory, but by custom of porces becomes so.

Port Charges: Light dues, steamers foreign 75c, coast 40c, sailers 50c, coast trade 25c per registered ton. Other charges, registry rcll charge \$2 at departure.

Stevedoring: Rates for loading cargo, general cargo \$1.40 per ton, 50% more after 5 o'clock. Rates for discharging cargo, \$10 per day, 7 to 5. Overtime cost per hour, \$1.50, 5 to 12, \$3 from 12 on. Cost per hour for general labor, per day \$10. Lighterage, cost per ton \$30 for 16-ton lighters and \$15 on shore for crane. Lighterage, cost per lighter per day, \$45 to \$55, cost double after 5 o'clock. double after 5 o'clock,

Accommodation: At present wharf accommodations for two steamers, but port works are in construction

which will accommodate many more when completed. Imports: Coal, coke, lumber, general merchandise,

machinery.

Exports: Copper, wheat, barley, beans, hides, wines. Names of Importing and Exporting Firms: Gibbs & Co.; Wessel, Duval & Co.; W. R. Grace & Co.; Williamson, Balfour & Co.; Morrison & Co.; Duncan, Fox Co.; six largest, many others; these nearly all have

branches at other principal Chilean ports.
Steamer Lines Using the Port: P. S. N. C., C. S. A.
V., Gulf Line, W. R. Grace & Co., Wessel, Duval, Braun & Blanchard Line (Punta Arenas), German lines (stop-

ped), Lamport & Holt, local lines.

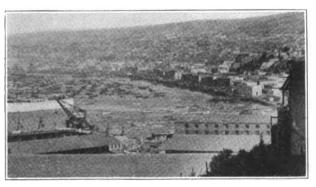
Consular Representation: All countries, 37 different consular agents. Leo J. Keena, consul general for the

United States.

Ships lie at anchor moored head and stern. Steamers mostly between buoys which cost \$3 per day. About 25 to 30 fathoms of water. Cargo discharged by lighters which are towed to and from vessel. Good weather during greater part of year. Fresh provisions procured at reasonable prices.

All prices quoted refer to Chilean currency.

Note: The price quoted for Valparaiso are general for only a few ports not far distant from Valparaiso. All ports in the nitrate district from Iquique down are in a different class and the prices quoted for Valparaiso can be doubled at these places and then may be too low. For example, water at Valparaiso put on board costs \$4.50 per ton. In Antofagasta \$15 per ton and freight discharge which would be \$30 or \$40 in Valparaisc would cost \$90, more or less, in Antofagasta. In all the nitrate ports the cost of living is more than



Valparaise Harber-Copyrighted by Underwood & Underwood

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double that in Valparaiso, Coquimbo and south of Valparaiso. There is no vegetation and everything must be brought in.

Valparaiso is the most important seaport of Chile and is the port of entry for all goods imported for the capital city, Santiago, which lies in the interior at a distance of 119 miles by rail. Santiago has a population of half a million and imports from all parts of the world. The best agricultural lands of Chile are found in the valley between Valparaiso and Santiago. These agricultural lands furnish every class of agricultural product and the products are sent through Valparaiso to the countries outside. All of the copper produced by the Braden Copper Company comes by rail from Rancagua to be exported at Valparaiso which is also the terminus of the Trans-Andine Railway. Shipments of freight are sometimes routed from the Pacific side through Valparaiso to Argentina via the Andean route.

### VANCOUVER British Columbia

# EXPORTS AND IMPORTS, FROM MARCH 31, 1911-1918

	Exports	Imports	Duty
1911	\$ 7,320,325	\$ 25,632,096	\$ 5,499,706.48
1912	8,148,697	32,428,597	7,221,323.30
1913	11,077,421	44,361,962	9,286,785.94
1914	17,058,893	38,281,541	7,470,144.55
1915	15,172,233	25,705,360	5,146,896.89
1916	15,559,567	20,067,373	4,765,677.47
1917	22,575,907	28,698,572	6,318,474.97
1918	28,959,296	40,974,260	7,605,144.10
Total	125.872.339	256.149.761	53.314.153.70

Population: City, 175,000.

The most outstanding feature of the industrial situation of Vancouver and British Columbia during 1918 was the very remarkable expansion in the aeroplane spruce industry and coupled with this, the continued development of shipbuilding. During 1918, shipbuilding, begun practically in 1917, has gone on apace; up to the first of October the number of vessels of wood and steel launched was 52, totalling 175,600 tons. The Dominion Government has placed orders for 10 steel steamers here, 4 of 10,000 tons and 6 of 8,100 tons each and work is progressing rapidly



Viaduct Over One Railread Yard

on the order of 40 wooden steamers for the French Government, 10 for the Belgian Government and 9 wooden schooners which are building for Norwegian firms.

The great activity in shipbuilding and taking out aeroplane spruce has had its results in lumbering and other industries. During the earlier part of 1918, all the mills of the Province were exceptionally busy and found ample markets locally in the Prairies and in foreign trade.

markets locally in the Prairies and in foreign trade.

Lumber exports from Canada during 1918 showed a tremendous increase as compared with the shipments of the previous year. In 1918 a total of 53,403,059 feet of lumber was exported, and in 1917 some 18,000,000 feet carried to foreign countries. China was the greatest buyer, taking 18,659,000 feet, or a trifle more than the entire shipments in 1917.

In the mining industry there has been corresponding activity. The low price of gold, the increased cost of supplies and the labor shortage have been the chief obstacles, but increases are shown in coal, copper and other metals. Some outstanding events of the year are the discovery of valuable deposits of platinum, manganese tungsten, graphite and other minerals. Talc is being shipped, new soda deposits are now being worked and of intense interest to British Columbia is the fact that shipments of iron ore to a plant in Washington (U. S. A.) are made.

Along general lines, the industrial situation in British Columbia and at Vancouver has shown a steady improvement in 1918. In pulp and paper manufacturing, the mills have been kept going at top notch speed throughout the year and even then they have not been able to keep pace with the orders ready to be placed. A new development of note is the fact that for the first time in British Columbia, grades other than newsprint have been made. The Pacific Mills have begun and perfected the manufacture of Kraft wrapping paper which is acknowledged to be of the best quality.

The preservation of food stuffs, both from field and sea has shown a steady growth in the Province and canneries and evaporators will this year put up increased quantities and more varieties than ever before. The yield of fruits and vegetables has on the whole been good and in spite of the shortage of some varieties of salmon, the total output of fish is again larger. In other staple lines new plants have been opened during the year and a number of industries have been established which are using raw materials hitherto untouched or using old material in a new way. Of the latter, an instance is the increasing number of factories for making wood products. There are now a score of firms making boxes, crates, sash and doors, toys, pails, barrels, baskets, piles, granaries, etc., which are ready to erect.

Another example of interest is the canning of whale meat, a process which has made a valued addition to the meat supply in these days of shortage. One whale will yield from 3 to 12 tons of prime meat and one company on the west coast has caught nearly 1000 whales during the 1918 season.

Other sea products have been put to use—a plant to manufacture dog fish and shark liver oil and fertilizer has been so successful that it will be enlarged and two plants have been established to utilize shark skins for leather. Fish waste is more and more being used to make poultry foods and fertilizer.

The establishment on Vancouver's inner harbor of a plant for the fixation of atmospheric nitrogen is an event of great interest and importance not only to Vancouver, but to the whole of Canada. Electric furnaces are being built for the production of nitric acid by the Arc process. The initial consumption of power will be 3,500 kilowatts and it is expected progressively to increase this consumption. The plant is being constructed with a view to the production of agricultural fertilizer now that the war is over and is the first electro-chemical plant in Western Canada

A plant is now under construction to use for tanning extracts, hemlock bark which has as yet been entirely wasted in British Columbia.

Latitude 49 degrees 17 minutes north, longitude 123

degrees 8 minutes west.



Harbor: The harbor of Vancouver extends from Point Atkinson and Point Grey on the west to Port Moody on the east, a distance of 24 miles. Its depth is sufficient at all tides to place the largest vessel against the docks, while anchorage is provided in midstream. The depth runs from 28 feet at wharves to 200 feet in midstream. The depth at government wharf is 35 feet.

Harbor Master: Capt. A. H. Reed, 712 Pender street

The Port of Vancouver is served by six well established railways. They are, the Canadian Pacific Railway, Great Northern, Canadian Northern Railway Co. (now govern-ment owned), Grand Trunk Railway, Pacific Great Eastern and Northern Pacific.

ern and Northern Pacific.

The Great Northern, Canadian Pacific Railway and the Grand Trunk have their private wharf terminals. The Canadian Northern Railway uses the government and other wharves according to routing, while the Northern Pacific patronizes the Great Northern Dock.

The charge for switching local cars amounts to \$5.00 per

car within the switching limit of Vancouver.

The cost of loading cars varies from 25c to 50c per ton, dependent upon the nature of the cargo loaded, but arrangements can be made for the loading of the cargo for actual cost of dock labor.

The port has three marine railways with capacities of 1,500, 1,800 and 2,500 tons.

The port has four shipbuilding yards, namely: Wallace Shipyards, Lyalls Shipbuilding Yards, Coughlan & Sons, and the Northern Construction Co.

Ordinarily no dockage is charged, wharf owners being content to receive their wharfage charges as a compen-

sation.

Bunker coal can be secured at Nanaimo and Union Bay.

#### Canadian Government Elevator

Another point of interest in Vancouver to the shipping world is the Canadian Government Elevator, which was completed in 1916, at a cost of \$700,000.

The extreme length of this structure is 470 feet, 70 feet wide and 170 feet high. It is constructed of reinforced

concrete.

It has 158 separate receiving tanks with a capacity of 1,250,000 bushels of grain. The elevator has been supplied with four delivery belts, so that four steamers could load bulk grain at the Government Wharf at the same time. The maximum capacity for delivery on four belts to both

sides would be 60,000 bushels per hour.

In connection with the elevator they have equipment for sacking grain. At the present time they can sack approximately 20 tons per day, but the plant is equipped so that with a little extension this could be increased to 100 tons per day. The cost of sacking wheat is 30c a ton, and oats 40c a ton delivered to freight shed or cars.

The elevator does not assume wharfage.

The elevator is excellently equipped for the storage of grain at the nominal charge of 1/60c per bushel a day after the expiration of the 15-day free period. This rate of 1/60c per bushel covers fire insurance. In connection with the elevator two cleaning machines are at present operated with a capacity of 2,000 bushels an hour, provision has been made for the installation of two additional machines, as soon as they are required. The charge in connection with the cleaning of wheat is 1/2c per bushel.

No charge is made for loading bulk grain into cars, as this is included in the receiving charge of ½c per bushel. The elevator could load at least 50 cars a day.

The Government Wharf which is connected with the elevator is equipped with nine grain spouts on the east side and ten on the west side, same being 70 feet apart.

The War Viceroy was the first vessel loaded at the elevator, the same being a trial shipment via the Panama Canal. The grain arrived in Great Britain in good condition and since then several steamers have loaded bulk grain at the elevator for the United Kingdom.

Pilotage: Pilotage at Vancouver is compulsory and the rates charged for this service are based on a combination of the steamer's draft and her net register. The present rate is \$1 per foot of draft, plus 1c per ton net

register.

On steamers arriving from the Orient and outside points, pilots are sent from Vancouver to Victoria to connect with the steamer and bring her to this port, but in the event no notice has been sent to the pilots in advance of the steamer's arrival at Victoria, the Victoria pilotage authority would delegate a pilot to bring the vessel to the pilot station, where the local Vancouver pilot would be taken aboard.

Port charges: Wharfage at all private docks is as-

sessed at a rate of 50c per ton, ship's manifest.

The Government Wharf charges wharfage at the rate of 25c per ton ship's manifest.

Customs: There are no charges for the customs supervision at this port, other than the payment of the customs officers' overtime for night work and for Sunday duty.

These charges are very small.

Light Dues: There are no light dues at the Port of Vancouver; however, vessels arriving that are not equipped with their own power plants can secure lights from any of the docks at nominal cost.

Other Charges: In addition to the foregoing a ship

entering this port must pay Sick Mariners Funds at the rate of 1½c per ton net register. No one vessel is to

pay this charge more than three times each year.

The harbor dues of the port amount to 3c per ton net register, no vessel being requested to pay for more than

five entries in the course of one calendar year.

Recently the docks have required payment by the vessel for the additional cost of working overtime, this cost includes the extra wage paid to checkers and customs officers for overtime service and for the extra wage paid to the dock workers.

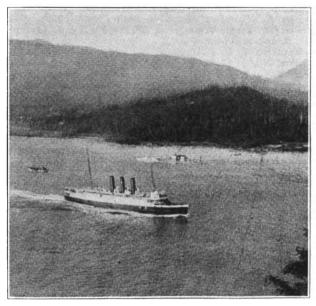
A nominal charge is made for boiler water furnished to steamers at private docks, the rate is 50c per 1,000 gallons while at the Government wharf the rate is one-half this

Stevedoring: The stevedoring business of the port is handled by two old and well established firms. The Empire Stevedoring Co., and the Victoria & Vancouver Stevedoring Co. The former is in charge of Captain W. M. Crawford. The Victoria & Vancouver Stevedoring Co.

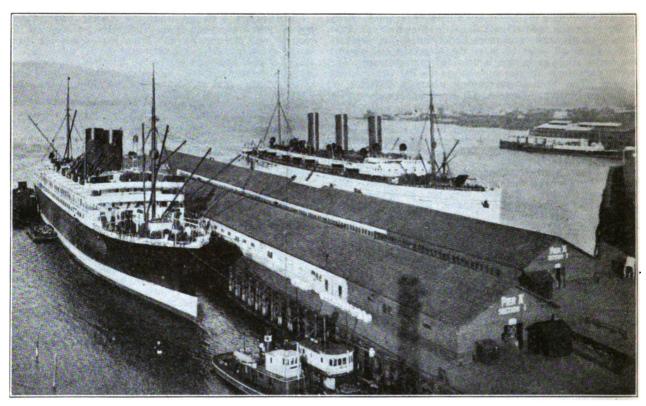
Rates for Loading and Unloading Cargo: The cost of handling general merchandise to and from vessels in Van-

couver is 60c per ton.

The average cost of handling steel is \$1.15 per ton. Of course, it must be understood that where delivery is made from car directly alongside the steamer and the steel is short, that charges would not be so high as in cases where the steel is taken across the dock and is extremely heavy or long.



Entrance to Burrard Inlet



Steamers from Australasia and Orient at Ocean Docks. Burrard Injet

The average rate for handling lumber is \$2 per M. Overtime and Cost of General Labor: The overtime rate per hour is \$1.15 on deep-sea vessels and \$1 an hour for overtime dock work in connection with deep-sea vessels. A lower rate is made on small coasting boats, being 65 cents an hour and 90 cents overtime.

General labor can be secured for trucking on the dock and for loading into cars, at a rate of 65c an hour for straight time and \$1 an hour for overtime. The overtime includes Sundays and holidays.

#### List of Wharves

Showing Lines of Steamships Sailing From Each Dock. C. P. R. Piers: Foot Granville street— Pier A: Canadian Australian Mail Line

Pier B; Frank Waterhouse & Co. vessels land at Pier

A and sail from Pier B.

Shed No. 1; C. P. R. Empress Line.

Shed No. 2; C. P. R. Seattle and Victoria steamers.

Shed No. 3: C. P. R. Nanaimo and Union Bay steamers.

Shed No. 4: C. P. R. Skagway, Alaska, Prince Rupert

and Northern B C. steamers.

Shed No 5: Pacific S. S. Co. and Tacoma & Vancouver
S. S. Co., (Now known as the Canadian National Railways)

The Canadian Northern Co. handles trans-Pacific freight over the following wharves: Government, Balfour-Guthrie, Johnson, Evans, Coleman & Evans.

B. C. Sugar Refinery Co.: Foot of Boundary street.
Great Northern Ry. Co.: Great Northern Wharf.
Balfour-Guthrie Dock: Used by Harrison Direct Line.
Canadian Robert Dollar Co.: Use Great Northern Dock.
Evans, Coleman & Evans Wharf Co.: Columbia ave.
Pier 1: Lincoln S. S. Co. Steamers, Dodwell & Co.,

steamer Fulton.
Pier 2: Dodwell & Co. (Blue Funnel Line).
Maple Leaf Line.

Gore Avenue: Foot of Gore avenue. Inland Trans. Co., Howe Sound Route.

Sadie Hiltz. Grand Trunk Pacific: Foot Main street. Grand Trunk Pacific steamers.

Heatley Avenue (Old City Dock): Heatley avenue. Tugs and steamers.

Hind Brothers: West of Gore avenue. Hind Bros., tugs and steamers. Metropole Trans. Co.'s boats. Second Narrows ferry.

Second Narrows terry.

Johnson Wharf Co.: Foot Columbia avenue.

East Asiath Co., Ltd., San Francisco Line.

New England Fish Co.: Foot of Gore avenue.

North Vancouver Ferries, Ltd.: Foot of Columbia ave.

North Vancouver City Ferries, North Arm S. S. Co.

West Vancouver Ferries, Ltd.

Dean Bros. & Co., North Arm Route.

Union S. S. Co. of B. C., Ltd.: Foot Carroll street.

Union S. S. of B. C., Ltd., steamers.

Terminal Steam Navigation Co.

Terminal Steam Navigation Co.

The Dominion Government wharf, situated at the foot of Salisbury Drive on the south side of Burrard Inlet, of Salisbury Drive on the south side of Burrard Inlet, is 800 feet long and 300 feet wide, with slips on either side 130 feet wide. These slips have a minimum depth of 35 feet at low water. The wharf has two warehouses. Shed No. 1, 676 feet long, 78 feet wide; Shed No. 2, 835 feet long, 98 feet wide.

The C. P. R. wharves have accommodations for about the state of feet 22 feet depth.

five ships of from 24 to 30 feet draft.

The Great Northern has a wharf of 400 feet length with a frontage of about 50 feet and slips at both sides.

The Johnson wharf and the Union Steamship Company

have each accommodation for two vessels of large tonnage, while the B. C. Sugar Refinery can take two. Evans, Coleman & Evans have 2,580 feet of wharfage.

Oil Docks: The two oil docks in use at the present time are the Grand Trunk Pacific at its own wharf, and the Canadian Pacific Railway at Coal Harbor.

Docks have connection with the Canadian Pacific Ry. the Great Northern R. R., and the Northern Pacific Ry.; the Canadian Northern Ry., and the Grand Trunk Pacific Ry. have termini at Vancouver.

The Maritime Exchange, 106 Winch Building, Vancouver. Captain James Stewart, manager. The purposes for which the association is formed are to establish and maintain a commercial exchange in the city of Vancouver;

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to foster and encourage domestic and foreign trade and commerce; to advance the commercial prosperity of the city of Vancouver and the Province of British Columbia; to promote the interests and convenience of its members: to inculcate just and equitable principles in trade; to establish and maintain uniformity in commercial usages; to acquire, preserve and disseminate valuable business information, and to adjust controversies and misunderstandings between its members and generally secure to its members the benefit of co-operation in furtherance of their legitimate pursuits.

Marine Agencies, Vancouver, B. C.: Anderson & Miskin, agents for Alliance Marine Insurance Co. Balfour, Guthrie & Co., agents for British & Foreign Marine Insurance Co., North China Insurance Co., H. Bell-Irving Insurance Co., North China Insurance Co., H. Bell-Irving & Co., Canton Insurance Office. D. E. Brown, Hope & Macaulay, agents for Yangszte Insurance Association. Ceperley Rounsefell & Co., agents for Thames & Mersey Marine Insurance Co. Dale & Co., Ltd., agents for the British Dominions General Insurance Co., Fireman's Fund Insurance Co., United States Lloyds. C. Gardner Johnson & Co., agents for Union Marine Insurance Co., Standard Marine Insurance Co. MacGowan & Co., agents for Insurance Company of North America, St. Paul Fire & Marine Insurance Co. Macaulay & Nicolls, agents for Boston Insurance Co. Vancouver Insurance & Vessel Agency, agents for Aetna Insurance Co. R. V. Winch & Co., agents for London & Provincial Marine & General Insurance Co., London Assurance Co., Ocean Marine Insurance Co., London Assurance Corporation, Leslie H. Wright & Co., agents for Pacific Marine Insurance Co. Wright & Co., agents for Pacific Marine Insurance Co.

Customs Brokers: Turnbull Bros., C. H. Usborne, F. G. Crickmay, G. H. Cottrell.

Bonded Warehouses: There are 62 bonded warehouses in Vancouver. Mainland Transfer Co., Ltd., is one of the principal concerns.

Bonded Warehouseman: G. H. Cottrell.

#### Steamer Routings for the Orient

China Mutual Steam Navigation Co. Ltd. (Dodwell & Co.) (Blue Funnel Line): Yorkshire Bldg., Vancouver; Belmont Blk., Victoria. British steamers. Piers—Evans, Coleman & Evans Wharf, Vancouver; Outer Wharf, Victoria. Sailings for China, Japan, the Philippines every 28 days. Freight.

East Asiatic Co. Ltd. (C. Gardner Johnson & Co., Agts.): Johnson Dock, Vancouver; 1117 Wharf St., Victoria. Danish steamers and motorships. Piers—Johnson Wharf, Vancouver, Outer Wharf, Victoria. Sailings for Scandinavia about monthly via San Francisco and Panama Canal; also sailings via San Francisco from and to the Orient. Freight. (Suspended.)

Nippon Yusen Kaisha (Japan Mail Steamship Co.) (W. R. Dale, Agt.): 916 Government St., Victoria. Japanese steamers. Pier—Rithet's Outer Wharf, Victoria. Sailings for Yokohama, Kobe, Shanghai, Hongkong, Singatalings of Steamship Co.) pore, Penang, Colombo, Manila, via Puget Sound, connect-

pore, Penang, Colombo, Manila, via Fuget Sound, connecting with company's steamers for Europe, Australasia, India, etc., fortnightly. Freight, passengers.

Osaka Shosen Kaisha (Osaka Mercantile S. S. Co., Ltd.) (C. Gardner Johnson, R. P. Rithet & Co., Agents.): Johnson Dock, Vancouver; 1117 Wharf St., Victoria. Japanese steamers. Piers—Johnson's Wharf, Vancouver; Outer Wharf, Victoria Sailings for Japan, China and Vladivostok every two weeks. Freight passengers

Vladivostok every two weeks. Freight, passengers.

Royal Mail Steam Packet Co. (Frank Waterhouse & Co., Inc., Agents.): 927 Rogers Bldg., Vancouver; 1308 Wharf St., Victoria. British steamers. Piers—Pier B, Vancouver; Outer Wharf, Victoria. Sailings for Europe, via Yokohama, Kobe, Hongkong, Manila, Straits Settlements and Suez, monthly sailings temporarily cancelled. Freight.

H. F. Ostrander Line: To Japan.

The Canadian Robert Dollar Co.: To Japan, China and Vladivostok.

#### For Europe

East Asiatic Co., Ltd. (C. Gardner Johnson, Agt.): Johnson Dock, Vancouver; 1117 Wharf St., Victoria. Danish steamers. Piers—Johnson Wharf, Vancouver;

Outer Wharf, Victoria. Sailings for United Kingdom and Continental ports and Panama Canal, monthly. Freight. (Suspended.)

#### For California

The Pacific S. S. Co.: Admiral Line for all California

Harrison Direct Line (Balfour, Guthrie & Co.): 739
Hastings St. W., Vancouver; 420 Hibben-Bone Bldg.,
Victoria. British steamers. Piers Balfour, Guthrie Dock,
Vancouver; Outer Wharf, Victoria. Sailings for Antwerp,
Glasgow and Liverpool, via Panama Canal, calling at California and Puget Sound ports westbound. Freight.

Royal Mail Steam Packet Co. (Frank Waterhouse & Company, Agts.). 927 Rogers Bldg., Vancouver; 1308 Wharf St., Victoria. British steamers. Piers—Pier B, Vancouver; Outer Wharf, Victoria. Sailings for Liverpool, via Puget Sounds ports and the Orient, monthly. Sailings

temporarily suspended. Freight,

#### For Australia

#### Canadian-Australian Mail Line.

#### For Puget Sound

Border Line Transportation Co.: To Seattle and

#### Consulates in Vancouver

American Consul General: George N. West; Irving N. Linnell, consul, Earl G. Johnson, vice consul; J. Frank Points, vice consul. 744 Hastings St. West. Belgian Consul: J. M. Whitehead, 779 Thurlow St. Brazilian Consul: S. J. Emanuels, 411 Pender St. W. Chilean Consul General for Canada: Hon. M. P.

Morris, 850 Hastings St. W.

Consul for the Chinese Republic: Koliang Yih, 402 Pender St. W. For British Columbia, Alberta, Saskatchewan, residing at Vancouver.

Danish Vice Consul: W. A. Ward, 207 Hastings St. W.

Ecuador Consul General: Hon. J. MacQuillan, 1038

Barclay St.

France, Acting Consular Agent: E. Chevalier, 470 Granville St.

Honduras Consul: R. R. Maitland, 470 Granville St. Italian Consular Agent: Nicola Massi, 203 Union St. Japanese Consul: S. Ukita, 525 Seymour St. Mexican Consul General: Senor E. S. Bravo, 850

Hastings St. W.

Netherlands Consul: M. A. Van Roggen, 318 Cambie

Norwegian Consul: C. B. Stalschmidt, 309 Richards Peruvian Consul: Harold G. White, 402 Pender St. W.

Russian Consul: Constantine Ragosine, 719 Jervis St. Swedish Vice Consul: R. V. Winch, 739 Hastings St. W.

Swiss Consul: S. Gintzburger, 122 Hastings St. W., for the Province of British Columbia and Alberta.

### **VICTORIA**

#### **British Columbia**

CUSTOMS RETURNS Years Ending 31st March

**Duty Collections** Imports Exports \$ 4,097,834 4,861,868 6,227,700 7,857,081 11,393,504 \$1,029,296.00 \$1,333,155 1,514,275 1909..... 1,240,612.14 1910..... 1,544,203.63 1,984,893.62 1,161,624 2,009,762 1911..... 1912..... 1,377,971 1,572,001 1,532,782 1913..... 2,618,025,13 8,820,077 2,016,683,47 1914..... 1,242,154.41 1915.... 4,879,880 988,845.96 1,075,869.85 1916..... 7,279,554 3,191,052 1917..... 6,828,375 600.523 6,714,324 4.690,703 1918..... 1,170,786.40

Vancouver Island, on which Victoria, (Population 50,000), is situated, is about 285 miles long, with an average width of about 60 miles. It is separated from the British Columbia mainland by the Gulf of Georgia and

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the Straits of Haro and Juan de Fuca, and bears a close resemblance to Great Britain in its geographical position, as well as in climate and certain natural characteristics. Its timber ranks amongst the finest in the world, and is of great extent; its coal measures are practically inexhaustible; the deposits of other minerals—iron, copper, gold and silver—are vast but slightly developed; its fisheries rival those of the Atlantic, and its soil is of wonderful fertility, capable of producing every grain, fruit, root and vegetable grown in the temperate zone.

The agricultural settlements on Vancouver Island, near Victoria, are along the line of the Esquimalt & Nanaimo Railway, and at Comox, are the oldest in British Columbia. The total area under crop in 1917 was about 31,406 acres, and the chief articles grown consisted of Island strawberries, raspberries, loganberries and currants, cherries, plums, apples, pears, quinces, etc. Cattle, sheep, swine and poultry do well on the Island, the climate being so mild as to permit their roaming at large and picking up an abundance of green food the greater part of the year.

The agricultural production showed an increase of 6.56 per cent for 1917 over that of the preceding year. Owing, however, to the advanced prices for practically all agricultural produce, the value of products from the farms and orchards showed an increase of over \$5,000,000.

A blockade of the Fraser river at Hell's Gate in 1913, which prevented a large proportion of the Sockeyes ascending beyond that point cut down the 1917 pack to 123,614 cases, as compared with 719,796 cases in the previous year. The total Fraser pack of all kinds of salmon was 377,988 cases, compared with 782,429 cases in 1913, and for the whole of British Columbia it was 1,557,485 cases, constituting a record.

The Victoria Whaling Company, which has two stations on Vancouver Island, operate eight whaling steamers, and the catch for 1917 was as follows: Canadian Stations, 379 whales; United States Stations, 209 whales.

#### Victoria's New Outer Harbor

Work on the improvement of the Outer Harbor by the government, which has been going on for some time past, is now completed, and the very finest and most modern equipment in the way of docks, warehouses, and machinery has been provided. There is now approximately 10,000 feet of berthing for the largest ocean-going vessels, and in addition, the new harbor furnishes a clear and straight outlet to the Pacific Ocean.

The sum of \$5,000,000, including breakwater, for the

The sum of \$5,000,000, including breakwater, for the initial outlay as a preliminary expenditure indicates the magnitude of the undertaking. It will eventually cost much more than this to provide for the shipping necessities of Victoria, but this sum gives the city a large and commodious harbor, perfectly protected, and furnishes accommodation for the constantly increasing ocean traffic

which is coming to her outer port.

The harbor in every respect measures up to the best harbors on the Pacific Coast, and will suffice for the needs of the Capital City until its population begins to approach the 200,000 mark. Two immense concrete piers with spacious warehouses and modern cargo handling facilities have been built out into the Straits of Juan de Fuca, and a railway slip has been built to enable car ferries to load and unload their trains at the docks.

A breakwater of stone, with concrete blocks surmounted by a concrete wall 2,500 feet in length extends westerly from Ogden Point. The concrete piers are 1,000 feet in length, and there is room for close to 30 of the largest ocean-going crafts. To connect the harbor with the rail-way terminals on the 112 acres set aside for that purpose on the former Songhees Reserve there will be direct rail con-

nection.

The Outer Harbor comprises an area of nearly 300 acres of water, varying in depth from 30 to 80 feet. The breakwater which has been completed under the Dominion Government's plan, will not only effectually shelter all the present piers but all piers hereafter to be built to the north, and, in addition, protect the entrance to the Inner Harbor, thereby proving of incalculable benefit to the great number of coasting vessels entering and departing from the Inner Harbor.

#### Steamship Companies

Union Steamship Company of B. C., Ltd., Belmont Block, George McGregor, agent. Harrison Direct Line, Belmont Block, Balfour, Guthrie & Co., agents. Pacific Steamship Company, 1117 Wharf street, R. P. Rithet & Co. Royal Mail Steam Packet Company, Union Bank Bldg., Findlay, Durham and Brodie, agents. Commonwealth Government Line, Balfour, Guthrie & Co., agents. Canadian Pacific Railway Company, British Columbia Coast Service, 468 Belleville street; Capt. J. W. Troup, manager. Grand Trunk Pacific Steamship Company, Wharf street; Capt. C. H. Nicholson, manager. Puget Sound Navigation Company, 468 Belleville St., H. J. Hartwell, agent. Blue Funnel Line, Belmont Building, Dodwell & Co., Ltd., agents. Border Line Transportation Co., Dodwell & Co., Ltd., agents, Belmont Bldg. Nippon Yusen Kaisha, 916 Government St.; W. R. Dale, agent. Osaka Shosen Kaisha, 1117 Wharf street; R. P. Rithet & Co., agent. Canadian-Australian Line, 1102 Government street; L. D. Chetham, agent. Maple Leaf Line. W. R. Grace & Co.

#### Docks

Dominion Government Outer Docks—Dominion Government, owners. Facilities for loading and unloading, strictly modern in every respect.

R. P. Rithet & Co.'s Outer Docks—R. P. Rithet & Co., owners. Bulk capacity, 30,000 tons; 11,500 tons broken cargo. Wharfage charges, 60c per ton, etc.

C. P. R. Docks—Canadian Pacific Railway Company, owners. Capacity, 10,000 tons bulk. Wharfage charges, 60 cents per ton. Adjustable slips for loading.

Grand Trunk Pacific Docks—Grand Trunk Pacific Railway Company, owners. Capacity, 1,350 tons. Wharfage charges, 60 cents per ton.

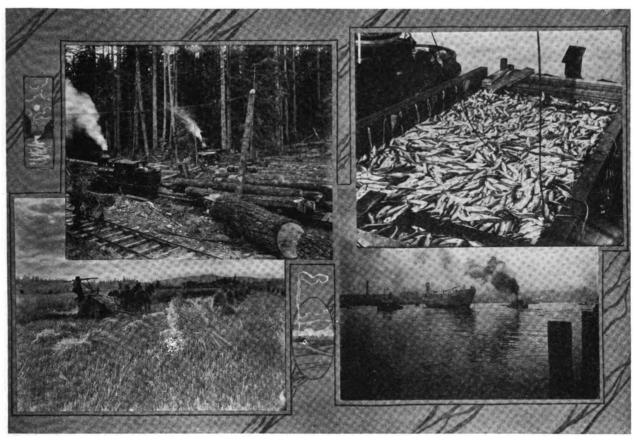
All vessels discharging their cargoes at Victoria have their own machinery for loading and unloading freight. No docks, except moor owned by the government at present have any rail connections, but are connected by water carriage with all distributing points.

Pier 1 Victoria (owned and operated by R. P. Rithet & Co.) Is located at the foot of Ontario street, and bordering the east entrance to the Inner Harbor. Its length is 780 feet by 100 feet, and it has a shed 541 feet long and 60 feet wide, having a floor space of 32,000 feet; a carrying capacity of 6,400 tons. There is a floor space of 5,800 feet extending outside of shed on outer end, and a floor space of 10,500 feet on inner end of shed. There are three slips on west side and two slips on east side by which cargo can be handled to and from ships' side ports, the depth of water being from 27 to 33 feet on west side of dock and 33 feet on east side; depth taken at low water. There are also waiting rooms and baggage room on this wharf.

Pier 2 Victoria (owned and operated by R. P. Rithet & Co.): Is located at the foot of Simcoe street, and is 1,050 feet long and 125 feet wide, with a shed 818 feet long and width 91, 59 and 80 feet. The floor space is 68,090 feet, with a carrying capacity of 13,400 tons. There is floor space at outer end of wharf of 21,500 feet, and at inner end of wharf, 18,000 feet. The depth of water is 35 feet at low tide. At west side of Pier 2 is a berth where small vessels can make fast, its length being 300 feet; depth of water from 25 to 32 feet, and has one slip. Between Piers 1 and 2 there is a width of 190 feet.

Situated between the two piers is a shed of 20,160 feet of floor space, capacity of stowing 4,100 tons. There is also a shed at the back of Pier 2, with floor space of 8,060 feet; its capacity is 1,800 tons, and it is provided with a portable electric piler.

In addition to being lessees of these wharves, R. P. Rithet & Co., are importers and wholesale dealers in groceries, liquors, wire logging rope, fire brick, clay, cement, etc.; and are also insurance, shipping and commission agents, the offices being situated at 1117-1121 wharf street, Victoria, B. C.



Industries of Victoria and Surroundings

Pacific Coast Coal Mines Ltd. has just completed a new dock with the exception of some minor engine parts, which will be in place before long. The dock extension consists of a pier 400 feet long by 50 feet wide, equipped with traveling tower, capable of delivery at a height of 70 feet above mean tide level.

This dcck is not at Victoria, but is located at Boat Harbor, about midway between Ladysmith and Nan-

#### Storage Companies

Safety Storage Company, Ltd., Douglas and Humboldt streets.

Duncan's Storage Warehouse, 535 Yates street. Both have bonded warehouses.

#### Government Officials

Inspector of Customs, W. Marchant. Collector of Customs, J. C. Newbury. Department of Immigration, Sam. Reid. Harbor Master and Port Warden, Capt. Chas. E. Clarke.

Shipping Master, Capt. Geo. Kirkendale. Secretary of Pilotage Authority, T. B. Monk.

#### Railroad Offices

Canadian Pacific Railway Company. Canadian Northern Railway Company. Grand Trunk Pacific Railway Company. Chicago, Milwaukee & St. Paul Railway Company. Esquimalt & Nanaimo Railway Company. Great Northern Railway Company. Northern Pacific Railway Company. Great Eastern Railway Company. Victoria & Sidney Railway Company. British Columbia Electric Railway Company.

All of the above companies do business with Victoria. The Canadian Pacific Railway's branch of the Esquimalt & Nanaimo Railway runs a regular passenger and freight service from Victoria, on the eastern coast of the island, to its present terminus at Port Alberni, 134 miles distant; and is building further north on the east coast to reach Courtenay. The Victoria & Sidney Railway runs from Victoria to Sidney, close to the end of the Saanich Peninsula, a distance of 18 miles. This railway is a branch of the Great Northern of the U. S., and connects between Sidney and New Westminster by means of a freight car ferry. The Canadian Pacific Railway runs a freight car ferry. The Canadian Pacific Railway runs a freight car ferry service between Ladysmith, Vancouver Island and Vancouver, B. C. The Canadian Northern is now building from Port Alberni to Victoria and is operating between Victoria and Patricia Bay, 15.8 miles. The Canadian Pacific Railway and the Grand Trunk Pacific Railway operate a line of steamships between Victoria and coastal points. The British Columbia Electric Railway Company runs a suburban line to Deep Bay, on the Saanich Peninsula a distance of 23 miles sula, a distance of 23 miles.

#### Pilotage

The ports of the Pilotage District of Victoria and Esquimalt shall be as follows:
(1) Port of Victoria.

Port of Esquimalt.

(3) William's Head Quarantine Station.

(4) The limits of said ports shall be inside a line drawn from Clover Point to Brotchy Ledge (upon which a stone beacon electric light is placed), bearing about W. by S. 1/2 S.—and a line drawn from Brotchy Ledge to Fisguard Light House (outside Scroggs' Rocks and Brothers' Island), bearing approximately W. by N.

(5) The limits for speaking vessels bound into either harbor shall not be at or outside a line drawn from William's Head to Trial Island, bearing N. E. and S. W. (All bearings are magnetic.)

(6) Any vessel, arriving at any port within this Pilotage District, and not having been spoken in compliance with the Pilotage Act, it shall be optional with the master

of such vessel as to the taking of a pilot outward.

(7) Vessels calling at William's Head Quarantine Station, and immediately proceeding to the Port of Victoria, or Esquimalt, shall be subject to the charges prescribed under clause (b) only.

#### Dues

(a) Vessels bound to other Ports and coming to an anchor in Royal Roads, the pilotage shall be free, except the services of a Pilot are employed, when pilotage according to the following graduated scale shall be payable:

From Inside or North of Race Rocks to Royal Bay or vice versa, 50 per cent of the prescribed rates under Clause (b), Sec. 18.

From Beechy Head to Royal Roads or vice versa, \$1.

per foot.

From Pillar Point to Royal Roads or vice versa, \$3 per foot

From Cape Flattery to Royal Roads or vice versa, \$6 per foot.

(b) For vessels entering into or clearing from the Ports of Victoria or Esquimalt, the rates of Pilotage shall

be as follows:

(1) For regular ocean steamers, 50 cents per foot draft of water and ½ cent per net registered ton up to the maximum of 3,500 tons on the inward voyage subject to a discount of 20 per cent, and 50 per cent of the above

rates on the outward voyage.

(2) For irregular ocean steamers, \$1 per foot draft of water and 34 cent per net registered ton.

- (3) For regular steamers in the coasting trade between San Francisco and Lynn Canal inclusive, the rate shall be the same as for regular ocean steamers, as rated in Clause 1.
- (4) For vessels under sail, \$2 per foot draft of water and 1 cent per net registered ton.
- (5) For sailing vessels in tow, \$1.50 per foot draft of water and 1 cent per net registered ton.
- (6) For all vessels entering into or clearing from William's Head Quarantine Station, the rates shall be 50 per cent of the prescribed rates of any class of vessel for Victoria and Esquimalt, subject to exemption in Sec. 17, Clause 7; provided, however, that all coasters between San Francisco and Lynn Canal inclusive when compelled by special instructions from the Dominion Government to call at William's Head Quarantine Station, shall be exempt from Pilotage dues, unless the services of a pilot are requested. (7) For

For all vessels of 500 tons and under, 75 cents

per foot draft of water.

Note-The dues before mentioned are subject to a discount of 20 per cent.

(c) Gulf Pilotage: For all vessels, from the limits of the Ports of Victoria and Esquimalt to the limits of all ports on Puget Sound and Gulf of Georgia and vice versa, the rate of Pilotage shall be \$1 per foot draft of water.

(d) Vessels proceeding from Victoria to Esquimalt, and vice versa, and having discharged or received a portion of their cargo in either harbor, and having paid full pilotage into either harbor, if proceeding with the assistance of steam, shall pay \$1.50 per foot.

(e) Any fraction of a foot not exceeding six inches shall be paid for as half a foot, and any fraction of a foot exceeding six inches shall be paid for as a foot.

- (f) Pilots shall, when called upon to do so, remove vessels from one part of either harbor to another part of the same harbor for the specific charge of \$10 for each and every removal.
- (g) The Pilotage Authority shall have power under this by-law to make such arrangements from time to time concerning the pilotage of vessels making regular trips between Victoria and Puget Sound, as to them may appear necessary or expedient in the interests of trade and commerce.

(h) Compulsory payment of Pilotage dues is not chargeable against vessels while in Royal Roads, unless such vessels shall enter either or both the harbors of Victoria and Esquimalt.

(i) When a vessel is bound to or from any other port in the Province, either laden or in ballast, and does not discharge or receive any cargo, passengers or mails, but simply enters it as a harbor of refuge, such vessel shall be exempt from Pilotage into and out of Esquimalt, excepting in cases where a Pilot is actually engaged by the Master for such services.

(j) Steamers making regular trips to Victoria and Esquimalt and having paid the prescribed rates under Clause (b) on the inward voyage and returning again to either of said harbors within a period of 20 days, shall only pay one-half of the inward rates.

### Rates on Storage of Merchandise (Storage per Month)

On measurement goods, 60 cents a ton of forty bic feet (40c. f.). On heavy goods, 60 cents per cubic feet (40c, f.). On heavy goods, 60 cents per ton of 2,240 pounds. Any fraction of a month to be charged as a month.

Regulations.

(a) Concerning the delivery of merchandise, payment of freight, etc.: When no express stipulation exists per bill of lading, goods are to be considered as deliverable on shore.

(b) Freight on all goods to be paid, or secured to the satisfaction of the captain or consignee of the

vessel, prior to the delivery of the goods.

(c) After delivery to the purchaser of the goods sold, no claim for damage, deficiency or other cause shall be admissible after goods sold and delivered have

once left the city.

(d) When foreign bills of lading expressly stipulate that the freights shall be paid in specific coin, then the same must be procured if required, or its equivalent given, the rate to be determined by the current value at the time at the banks.

#### Ordinary Port Charges, Victoria, B. C.

Hospital dues, per net ton, payable three times an-Hospital dues, per net ton, payable three nually, 1½ cents.
Harbor dues, payable twice annually, \$5.
Bill of Health, \$1.
Port agency, \$15 and up.

Dockage charge (no cargo landed), \$4 for the first 200 tons and ½ cent for each additional ton.

#### Stevedoring-Loading

Salmon or general cargo, per ton, 50 cents.
Ballast (furnishing and supplying same as required.
2,240 lbs.), per ton, \$1.50 to \$2.00.
Lumber and timber, per 1,000 feet, \$1.35 to \$1.60.

#### Stevedoring—Discharging

General cargo (weight and measurement), per ton, 55 cents.

Coal, per ton, 85 cents.

Ballast (2,240 lbs.) (excepting mud), per ton, 40 cts.

## **VLADIVOSTOK**

#### Siberia

Position: L'atitude 43 degrees 7 minutes north, longitude 131 degrees 54 minutes east.

Population: About 100,000.

The port of Vladivostok is at present the only Pacific

Ocean gateway to the Russian Republic.

The port is situated on Muravieff Peninsula, on the Gulf of Peter the Great, and the harbor consists in Amur Gulf, from 5 to 13 fathoms, and the Usuri Gulf, 13 to 20 fathoms. The quays, of which there are at present two excellent ones, are located on the Golden Horn, four miles long and nearly one mile wide. The

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government is carrying on considerable new work, and will eventually make this one of Russia's greatest ports. The harbor is ice bound for three months, but ice-breaking vessels keep it open to commerce. All of the trans-Pacific steamship lines are represented. This is the home port of the Volunteer fleet, comprising 32 modern vessels. Direct rail connection with Petrograd and all Russian and Chinese points. Petrograd is 8,390 miles

Pilotage: Pilots may be obtained at Skrybloff Island, five miles outside the harbor, in the summer, provided

five miles outside the harbor, in the summer, provided the time of vessel's arrival is known, otherwise either at Ulysses Bay or outside the harbor. Rate from Skrybloff, roubles 75.00, and Ulysses Bay, roubles 60. In winter pilots will not go outside the harbor. Charge for berthing, roubles 35.00.

There are two drydocks at Vladivostok, which will take vessels up to 560 feet length, 90 feet beam and 28 feet depth. The shipyards shops do not take work from private owners. Charges for the use of drydocks are about 24 copecks (about 12 cents) per gross ton for the first three days, and 5 copecks (about 2½ cents) for each additional day for vessels over 4250 tons

for each additional day for vessels over 4,250 tons.

There are also special port dues and customs dues on different commodities. Customs regulations require

that masters must have:

Manifest of cargo, certified and signed by captain's broker or agent at port of loading.

2. Bill of lading.

3. Ship's declaration. 4. Bill of health.

Crew list. Specification of all provisions on board, as well

as of all ship's gear, anchor, chains, etc.
7. List of all articles and clothes, new and old, be-

longing to captain and crew.

8. List of passengers, if any, and their luggage.

Articles and register.

Absence of any of these will render captain liable to a fine.

Port Charges: Tonnage dues, 30 Cop. per net reg. ton. Other charges, wharfage Ro. 50 for vessels up to 300 feet and Ro. 7 for each additional 50 feet; mooring

Stevedoring: Rates for loading cargo, owing to increased and increasing wages and expenses, unable to give any definite information at present. Lighterage, cost per ton, Ro. 3 to 5 per freight ton. Lighterage, cost per lighter per day, from Ro. 25 to Ro. 200 per

day. Crew's wages extra.

Accommodation: Depth of water alongside wharves, 28 to 30 feet; rise and fall in summer 1 foot, winter 2 feet; 5 wharves available for discharging railway material; 8 wharves for loading beans and bean cake, and discharging light cargo such as barbed wire, etc.; 3 wharves for discharging ammunitions; wharves used for steamers on the Japan Mail service, when vacant can be used for vessels with general cargo; 2 new wharves being built.

Imports: Machinery, manufactured goods of all kinds, hardware, railway material, war material, cotton,

tea and general merchandise.

Exports: Soya beans, beancake, timber, seeds, fish.



Vladivestek Harber

Names of Importing and Exporting Firms: Bryner, Kousnetzoff & Cc., Mitsui & Co., Choorin & Co., Sterelny & Co., Grusko Tschernego, Gaston, Williams

& Wigmore.

Steamer Lines Using the Port: From New York via Panama Canal, American & Asiatic S. S. Co., American Manchurian Line, American & Oriental Line, Barber Line, A. Holt & Co., Nippon Yusen Kaisha; from Van-couver, Canadian Pacific Ry. Co.; from San Francisco, Robert Dollar Co.; from Japan ports, Nippon Yusen Kaisha and Osaka Shosen Kaisha; from English ports, Glen and Shire lines; Pacific Coast ports, Frank Waterhouse & Co.; from Japan, China and Coast Ports, R. V. F.

Consular Representation: France, Great Britain, Holland, Japan, China, Norway, Sweden and United

States.

### **WAKAMATSU**

Japan

Population: 31,000.
Pilotage: From Osaka, 120 yen; Kobe, 110 yen; Hesaki, 45 yen; Moji, 35 yen; Fascura, 25 yen. Wakamatsu to Yawata Steel Works quay, 15 yen. Extra for vessels over 1,000 tons of 12 ft. draft.

Port charges: Harbor dues steemers loading coal.

Port charges: Harbor dues, steamers loading coal or general cargo, up to 200 tons, 5 sen per ton; 300 tons, 7 sen; 400 tons, 9 sen; over 400 tons, 10 sen. Buoyage, 2 yen each buoy for first 48 hours, then 1 yen for each 24 hours after. Vessels with cargo pay both inward and outward dues. Loading coal, 19 sen per ton by junk, and 2 sen by hoists. Water, 40 sen per ton.

Accommodation: Depth inner harbor, 16 feet; main and outer harbor, 20 feet. Two hydraulic and 3 steam hoists on wharves. Moving buoys in main harbor, 17. Rise of tide, St. 4 feet 7 inches.

Imports: Iron ores, pig iron, coal, rice, beans,

mineral oil, rails, beancake. Exports: Coal, steel, metals.

This port is 11 miles south-west of Moji, and is near the government steel works.

### WALLAROO South Australia

Position: Latitude 33 degrees 55 minutes 49 seconds north, longitude 137 degrees 37 minutes 30 seconds east.

Population: 4,000

Port Charges: Tonnage dues, port dues, and Commonwealth Light dues same as Port Pirie. Wharfage,

general, 1/8 ton; jetty dues, 3d.

Pilotage: Compulsory. Under 500 ton reg. £2 inwards or outwards; 501 to 1,000 tons, £3 inwards or

outwards; 1,001 and upwards, £4.

Accommodation: Harbor safe for vessels of 23 feet draft. Maximum depth loaded, 28 feet, 4 inches. Jetty, 2,810 feet long has accommodation for 10 vessels; depth, 16 feet at inner to 28 feet at outer berths. Four hydraulic cranes on wharf. Port has railway connections with Adelaide, which is 124 miles distant. Rise and fall of tide, about 4 feet, 8 inches.

Coal, coke, pyrites, phosphates, timber, Imports:

general. Exports: Wheat, flour, copper ore, bluestone, superphosphates, wool.

### WANGANUI New Zealand

Position: Latitude 39 degrees 57 minutes south, longitude 175 degrees east.

Pilotage: 1d reg. ton if piloted by signals from the staff only; 2d per reg. ton for river pilotage; 3d per reg. 1d reg. ton if piloted by signals from the ton if pilot boards and conducts vessel beyond bar.



Port charges: Port dues. 1/2d per reg. ton on arrival on not in excess of 8,000 tons, and so that maximum in on not in excess of 5,000 tons, and so that maximum in one-half year shall not be over 3d per reg. ton. Light dues, steamers, excepting coasters, 4d per reg. ton; coasting vessels, 3/4d per reg. ton; sailing vessels, other than inter-colonial trading vessels and coasters, 6d per reg. ton; inter-colonial trading sailing vessels and coasters, 6d per reg. ton. Harbor dues, steamers, 2d per ton for first day, 1d per ton per day for 5 succeeding days; sailers, 1d and ½d. Wharfage, cargo 3/ per ton, inwards; 2/ per ton, outwards. Labor, 1/6 per day. Overtime cost per hour. 2/6.

Accommodation: Ten cranes on Head's wharf. Exports: Hides, tallow, wool, grain, frozen meats.

### WARRAMBOOL Victoria, Australia

38 degrees 25 minutes south, longitude 142 Position: degrees 32 minutes east.

Port Charges: Light dues, 6d. ton reg. Towage, 1/ ton reg. Loading and discharging, 1/ per ton.
Pilotage: Steamers, 1½d; sailers, 2½d. ton reg. in-

wards or outwards.

Accommodation: There is good mooring, but anchorage is unsafe.

Imports: General merchandise. Exports: General produce.

### WELLINGTON New Zealand

Wellington, situated in Port Nicholson, is an excellent and spacious harbor situated on the northern shore of Cook Strait, and has sufficient depth of water and width of entrance for the largest ships. Wellington lies in the southwest part of Port Nicholson, called Lambton Harbor, which has a depth of from 7 to 15 fathoms. The rise and fall of the tide varies from three to four feet. Vessels can obtain plentiful supplies of provisions and fresh water. Shortest sea route from Liverpool, 11,800 miles. The harbor is under the management of an electric board. All harbor is under the management of an electric board. All communications should be made to the Secretary, Harbor Board, Wellington, N. Z. There are 7,760 lineal feet of berthing accommodation, with depths of water from 30 feet down to 12 feet, including six berths for ocean steamers. The outer T of the Queen's wharf is 880 feet long, with depths from 26 to 30 feet, and is provided with a 10-ton hydraulic crane, a 40-ton hydraulic crane is placed at a berth having 22 feet of water. There is a complete installation of 2-ton hydraulic cranes and return complete installation of 2-ton hydraulic cranes and rotary jiggers for all the principal berths, with jiggers for handling gragers for all the principal berths, with jiggers for handling cargo in the stores. Ample storage accommodation exists, and wool and hemp presses are provided. The board receives all cargo at the ship's slings, giving a receipt to the vessel. The Railway Wharf, with one ocean berth, is in communication with the railway services of the North Island, and a new wharf (Glasgow Wharf) is now being built with two ocean berths with 32 feet depth of water, and fitted with hydraulic cranes. The board owns bonded and free stores for the storage of grade for long periods. and free stores for the storage of goods for long periods, apart from the transit or export stores. There are dolphins and buoys in Evans' Bay for swinging ships for adjustment of compasses. There is a patent slip in Evans' Bay 1,070 feet long, on grade of 1 in 23, with a cradle 260 feet long, capable of taking a vessel of 1,600 tons. Repairs to machinery and boilers can be made by several firms.

Population: Wellington and suburbs, 85,000: Wellington provincial district, 150,000.

Pilotage: Not Compulsory. Steamers, inwards, 3d, outwards, 2d. reg. ton. Sailers, inwards, 4d, outwards, 3d. ton.

Port Charges: 2d per ton on arrival, but not to exceed 6d in any half year. Steamers not coming to a wharf, nor discharging or loading cargo, and only taking in coal, ships' stores, or water, are exempt from port charges.

Removal Fees: For removals by the harbor master to or from the wharves and inner anchorage, 1d per ton for each removal; minimum, 10s. Compulsory for all vessels except regular traders having exemptions. Pilotage, port charges, and harbor master's fees collected by His Majesty's customs on behalf of the board.

Light Dues: Light dues are pavable to the government Light Dues: Light dues are payable to the government (customs). Sailing vessels, other than coasters and intercolonial vessels, 6d per ton register; on intercolonial sailing vessels, and all steamers, except coasters, 4d per ton; on coasting steamers and sailing vessels, ¼d per ton. All foreign going vessels which call at Wellington, having previously called at and paid light dues at any other port, pay ¼d per ton. Water is supplied by the board at a charge of 6s 8d per 100 gallons. Minimum charge 28 charge of 6s 8d per 1,000 gallons. Minimum charge, 2s.
Wharfage: Berthage at the wharves for vessels discharg-

ing, loading or ballasting is free within the limits of three days for a vessel under 100 tons, increasing gradually to days for a vessel under 100 tons, increasing gradually to 15 days for a vessel of 1,000 tons, and one day for every 100 tons above 1,000 tons. Should further time be required one day extra for every 100 tons register may be allowed upon the payment of 34d per register ton per day.

Ballast: Good ballast is obtainable, delivered at the ship's side, at from 2s 6d to 3s 6d per ton for clay and

rock, which sums include wharfage, Is per ton.

Imports: General merchandise, coal, timber. Exports: Frozen and preserved meats, timber, tallow, grain, wool, skins, hemp, butter, cheese,

### WESTPORT New Zealand

Population: 5.000.

Position: Latitude 41 degrees 43 minutes 47 seconds south, longitude 171 degrees 35 minutes 14 seconds west. Pilotage: Free up to 100 ton reg.; over 100 tons, steam-

towage one way only.

Port charges: Lights sailers (foreign), 6d ton reg.; steamers, 4d; coasting (New Zealand), 1/4d. Receiving and discharging ship's ballast, 1/ ton min. Vessels lying at wharf, 1d per ton net reg. per trip up to 1,400 tons; above, 2d per ton net reg. per trip; min. 5/. Labor, 1/6 per hour per man.

Accommodation: Bar harbor; depth in river and on bar in fair way, 18 feet LWOST; at HWST, 26 feet on bar. Vessels may depart drawing 21 feet 6 inches at springs, and 20 feet at neaps. ST. rise 10 feet. Coal-loading wharf, 22 to 25 feet water LWST, at staiths. Cranage, one 12-ton crane, and two 20-ton, and one 15-ton coal cranes. Cattle wharf.

The principal export is coal. Westport is 60 miles from Greymouth and 155 miles from Nelson.

### WILLAPA HARBOR Washington

Willapa Harbor has a minimum depth from Raymond to the sea of 19 feet to 110. The government and the city of Raymond this year are expending \$500,000 in deepening the channel from Raymond to the sea to a depth of 24 feet at mean low tide. Willapa Harbor is located between latitude 46 degrees 40 minutes 42 seconds, longitude 122-124 degrees.

There are no mooring buoys, all vessels tying up to the different wharves. There are a number of companies operating here, the Robert Dollar Co., Sudden & Christenson, J. R. Hanify, F. S. Loop, Olson & Mahoney, American-Hawaiian and a number of others.

The facilities for loading and unloading are very good, although at this time all vessels use the lumber com-



panies' docks for discharging and taking on cargo. There is rail connection with all of these docks and a minimum charge is made for wharfage.

Geo. Devers is the deputy Custom official for this district and is located in South Bend, three miles distant.

The Northern Pacific is in operation in Raymond and also the Milwaukee. The Oregon-Washington and the North Bank have both announced that lines will be built to this harbor

### WU HU China

Position: 31 degrees 18 minutes north, longitude 118 degrees 21 minutes east.

Population: 120,000.
Pilotage: Not compulsory, but necessary.
Port Charges: Vessels over 150 tons, 40 tael cents per ton; under 150 tons, 10 tael cents per ton. One payment is good for 4 months for ships in coast trade. Loading, by coolie labor, 12c to 16c per day,

Accommodation: Anchorage one-third mile from south bank, limits fixed by Chinese customs authorities. Canal to Ningkwafu has an average depth of 8 feet. Only tide affecting harbor occurs in mid-winter when river is at lowest. During the summer when river is in flood, current moves 5 to 7 knots. Loading and discharging is done on hulks.

Imports: Cotton piece goods, woolens, sugar, kero-

sene oil, metals.

Exports: Raw and waste silk, tea, hides, seed, groundnut kernels, wheat, rice, silk, feathers, beans, white alum.

Consular Representation: Great Britain.

### **YOKKAICHI**

Japan

Population: 33,000.

Port for Nagoya in Miye prefecture.

Accommodation: Natural harbor; 48 feet at LT.; limit, two miles from lighthouse and quays. Depth at berths and quays LT., 30 feet. Cargo is handled by lighters.

Imports: Wheat, rice, soya beans, rape seed, petroleum, raw cotton.

Exports: Rice, tea, cotton yarn, sheeting, porcelain, earthenware.

## YOKOHAMA

#### Japan

Position: Latitude 35 degrees 26 minutes north, longitude 139 degrees 39 minutes east.

Population: 460,440.

Pilotage: Nct compulsory.

Tonnage dues, per trip, 5 sen (2½c) per registered ton; per year, 15 sen (7½c) per registered ton.

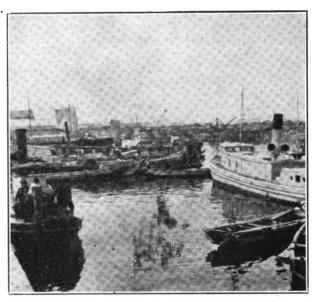
Wharf or pier dues: First 24 hours or part thereof, 2 sen (1c) per registered ton; up to 96 hours, 3 sen (1½c) per registered ton. For each additional 24 hours,

(1½c) per registered ton. For each additional 24 hours, 1 sen (½c) per registered ton.

Buoy charges: Vessels under 1,000 registered tons, Y7.00 (\$3.50) per day; vessels from 1,000 to 5,000 registered tons, Y10.00 (\$5.00) per day; vessels from 5,000 to 10,000 registered tons, Y15.00 (\$7.50) per day.

Customs permits: The customs office and compounds are open every day from sunrise to sunset, expending on Sundays and holidays. For opening the

cepting on Sundays and holidays. For opening the custom office on a Sunday or a holiday to clear import or export merchandise a fee of Y10.00 (\$5.00) per hour is charged. For opening the custom compound on a Sunday or a holiday to enable merchandise to be loaded or unloaded a fee of Y2.00 (\$1.00) per hour is charged. For opening the customs office after sunset a fee of Y20.00 (\$10.00) per hour is charged up to mid-



Inner Basin, Yokohama-Copyrighted by Underwood & Underwood

night, after which the fee is Y30.00 (\$15.00) per hour. For keeping the customs compound open after sunset to enable merchandise to be loaded or unloaded a fee of Y4.00 (\$2.00) per hour is charged up to midnight, after which the fee is Y6.00 (\$3.00) per hour.

Light Dues: None.

Other charges: Wharfing coolie charges, steamers under 1,000 tons gross, Yen 2.25 (\$1.12½); steamers 1,000 to 2000 tons gross, Yen 3.00 (\$1.50); steamers 2,000 to 3,000 tons gross, Yen 4.50 (\$2.25); steamers 3,000 to 5,000 tons gross, Yen 5.25 (\$2.62½); steamers 5,000 to 7,000 tons gross, Yen 7.50 (\$3.75); steamers 7,000 to 10,000 tons gross, Yen 9.75 (\$4.87½); steamers 10,000 to 13,000 tons gross, Yen 12.00 (\$6.00). Night work 20% extra. Placing gang way and planks Yen 3.00 (\$1.50) to Yen 5.00 (\$2.50) per steamer.

Stevedoring: Rates for loading cargo—general per ton (weight or measurement), 35 sen (17½c); rates for discharging cargo—general per ton (weight or measurement), 35 sen (17½c); overtime cost per hour per gang, Y6.00 (\$3.00); cost per hour for general labor, 30 sen (15c); lighterage; cost per ton general cargo, 80 sen (40c); lighterage, cost per lighter for day 50 to 70 tons, Y25.00 (\$12.50). The above rates are present ruling rates and subject to change.

Accommodation: On bay of same name. Harbor enclosed by two breakwaters, one 5,380 feet, and the north one 6,700 feet in length, leaving an entrance over 800 feet wide, and with a depth of 33 feet at lowest spring tide. Anchorage in harbor 1,237.8 acres. Iron landing pier 1,800x62½ feet in front of custom house; 5,706 feet of quay walls with depth of 20 to 32 feet, with 14 sheds of 50,260 square yards area and two warehouses of three stories covering 7,614 square two warehouses of three stories, covering 7,614 square yards. Much improvement and enlargement of accommodations being carried out by the government. Spring rise, 7¼ feet, Neap, 4½ feet. Two floating derricks, 45 and 30 tons.

Imports: Machinery, dry goods, fertilizers, metals, and metal manufactures, sugar, kerosene oil, etc.

Exports: Tea, silk, lacquer-ware, hemp, coal, copper, porcelain, etc.

Exports from Port Yokohama (1917) \$332,532,025; to United States \$192,015,979.

Imports into Port Yokohama (1917) \$143,201,443; from United States, \$71,405,511.

Names of Importing and Exporting Firms: American Trading Company, 1 Yuraku-cho 1-chome, Koji-mahi-ku, Tokyo; Sale & Frazar, Ltd., Central P. O. Box 18, Tokyo; Bagnall & Hilles, 42 Settlement, Yokohama;



One of the Big Piers at Yekshama—Copyrighted by Underwood & Underwood

S. Isaacs & Co., P. O. Box No. 146, Yokohama; The F. W. Horne Company, 6—7 Takiyama-cho, Kyobashiku, Tokyo; Andrew & George Co., 16 Takegawa-cho, Kyobashi-ku, Tokyo, The Hospital Supply Company, 1 Owari-cho 1-chome, Ginza, Tokyo; Patten, Mackenzie & Co., P. O. Box No. 219, Yokohama; China and Japan Trading Co., Ltd., 89-c Settlement, Yokohama.

Steamer Lines Using the Port of Yokohama: Pacific Steamer Lines Using the Port of Yokohama: Pacific Mail Steamship Company, San Francisco; China Mail Steamship Company, San Francisco; Toyo Kisen Kaisha, San Francisco; Nippon Yusen Kaisha, Seattle; Osaka Shosen Kaisha, Seattle; Canadian Pacific Ocean Services, Ltd., Vancouver; Nederland and Rotterdam Lloyd Royal Mail Lines, San Francisco.

Consular Representation: Argentine, Consulate General; Belgium, Consulate General; Brazil, Consulate; Chile, Consulate General; China, Consulate General; Colombia, Consulate; Denmark, Consulate; France, Consulate; Great Britain, Consulate General; Italy, Consulate; Italy, sulate General; Netherlands, Vice Consulate; Norway, Consulate; Portugal, Vice Consulate; Russia, Consulate; Spain, Consulate; Sweden, Consulate; Switzerland, Consulate General; United States (Deo. H. Scidmore, consul general); Venezuela, Consulate.

#### How Yokohama Serves Tokyo

Located 18 miles from Tokyo, to which there is direct steam and electric connection, as well as a lighter service operating on the Bay of Tokyo, Yokohama has a situation analagous to that of Kobe with Osaka. Yokohama as the seaport of the great capital city of over 2,000,000 inhabitants, handles all of the outgoing and incoming commerce of its larger sister. This is only one of the many cogent reasons why Yokohama looms up as such an important factor among the world's great ports.

In consequence of the vast business handled here in connection with the capital, the equipment of the port is highly modernized to meet the demands on its shipping facilities. That is why Yokohama boasts of one of the largest and most commodious piers in the world, and here the greatest of ships may lie and load and unload their cargoes.

Tokyo, the destiny of which is so closely interwoven with that of Yokohama, lies at the upper end of the Bay of Tokyo, which is an extension of the Sea of Japan.

Among the various industries in the vicinity of the seaport, the numerous shipbuilding plants, some expanded to cope with the new situation, and others lately established, have probably made the most progress in the recent industrial activities of this region.

### YUENSAN Chosen

Position: Latitude 39 degrees 11 minutes north, longitude 127 degrees 26 minutes east.

Population: 47,400.

Port Charges: Tonnage dues, foreign vessels 25 sen per net reg. ton. No tonnage dues charged at any open ports of Chosen if first charge has been paid. Shipping and landing, 40 sen per ton.

Accommodation: Entrance, 21/2 miles wide, with depth of 5 to 8 fathoms. Depth at quays and berths, 5 to 6 fathoms. One 3-ton crane, no charge.

Imports: Cotton goods.

Exports: Soya beans, fish, rice, cattle, hides.

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IMPORT DEPARTMENT handles all kinds of Raw and Manufactured Articles, Iron, Steel, Lumber, etc. DRUG AND CHEMICAL DEPARTMENT—all kinds of Pharmaceutical Drugs and Chemicals, both Import and Export. EXPORT DEPARTMENT—Curios, Fancy Goods, Gloves, Hoslery, etc. PRODUCED DEPARTMENT—Beans, Peas. Seeds. etc. SILK DEPARTMENT—Habutae, Crepes and Silks of all descriptions. When corresponding please address the Department interested.

# South and Central American Trade

### Prepared by the Mechanics and Metals National Bank. New York

Trade of the United States with South and Central America has been stimulated to a notable degree in the past five years. The complete isolation of some of the nations in Europe during the war, and the curtailment in the trade of other European nations, made the countries of this hemisphere which lie south of the equator commercially more dependent than ever upon the United States and the present outlook is that this country has no intention of forsaking an advantage thrust upon it as a result of

the great conflict.

The opportunities presented to our manufacturers and merchants, for the development of a permanent trade with Latin-America, are large and full of promise. But for a manufacturer or merchant in this field there are a number of rules which it is essential from the first to observe. Study the market you seek. There is more difference between the Argentine Republic and Nicaragua than there is between Minnesota and Texas. Acquaint yourself thoroughly with conditions, the class and style of merchandise required, what your competitors are doing and what terms they allow: all this in order to be prepared to meet competition when you finally send your salesman into the chosen territory

The export business cannot be gone into lightly, nor as a temporary antidote for unsatisfactory local conditions. To engage in it necessitates being always prepared to supply, at short notice, what foreign clients want, whether domestic business is low or booming. In that way only will export business prove both satisfactory and profitable.

Latin races are sensitive and proud, and you must therefore be especially careful not to offend in seeking information. When you have once gained the confidence of a South American firm, it will not hesitate to give you all the information you want.

#### General Standing of Firms

The financial responsibility of your foreign clients should be investigated as carefully as that of your domestic customer. Do not think, merely because he is located a few thousand miles from you, that he is a bad credit risk. A good firm in any country is as good as a good firm in this country, and just as deserving of credit.

#### Terms of Sale

We most emphatically recommend that, before shipments are made, you agree with your customer upon every detail of the terms of sale and then adhere to such terms most scrupulously. Settle beforehand whether your client is to pay interest and banking charges, and the amount of each, in case he is to pay for them.

#### Representatives

The greatest care should be exercised in the selection of the man you send out as your salesman. Bear in mind that your clients do not know you and can only judge your character and standing by that of your representative. The European houses, which have made such a marked success of their foreign business that their methods should at least be given thorough consideration, make it a practice to send out one of their junior partners to the new field they wish to develop.

#### Language

This may not always be possible, because less attention is devoted to the study of languages in this country than in the most successful European countries. Do not send a representative to a Spanish-speaking country merely because he knows Spanish. Be even more careful in your selection than in that of your domestic salesman. Unless he knows the merchandise thoroughly, you might better save his expenses.

Avoid sending to Brazil a man who speaks only Spanish. Should you be unable to find a satisfactory Portuguesespeaking representative, send one who knows French. There are obvious advantages in having a salesman represent a group of manufacturers, but unless the man selected is thoroughly acquainted with your product, avoid ioining a combination.

#### **Ouoting**

When making quotations to your client, should it be impossible to name a figure for the goods delivered at the custom house in his locality or the nearest one thereto, make your price cover the delivery to the steamer at the port of shipment. If you must quote a price free on board from your city, do not merely say "such a price f. o. b.," because your customer could then only guess whether you mean f. o. b. factory, cars New York, or steamer. When quoting a price at destination, or cost, insurance, freight (c. i. f.), make sure that all expenses are included, even such charges as interest and bank collection.

#### Credit Information

The best medium for securing reliable foreign credit reports is your banker. If he does not have the desired information on file, he will obtain it for you. Always bear in mind that your banker, if you have chosen the proper kind, is your best business friend.

#### Length of Credit

All new countries, because they are comparatively undeveloped, ask and obtain longer credits than older countries. Money is worth more to them than the rate of interest they pay you for the accommodation. There are two ways of extending credit, one the open method, your customer remitting the money to you as it becomes due; the other, that of drawing a time draft against your client, either 30, 60 or 90 days after sight or date.

The second method is generally preferred, as it provides a commercial instrument which can be discounted. The usual length of credit extended by North American merchants in South and Central America is 90 days after

arrival of the merchandise. Sometimes longer or shorter credits are granted, but 90 days is the common practice. When figuring the amount of interest to be charged to your customer, you should take into account the length of time consumed by the merchandise going to its destination. tion, as well as, after payment, the time required for the remittance to reach you. For instance, when goods are sold in Argentine Republic, payable 90 days after sight, interest is generally charged for five months, the three months' time of the draft and one month for transit in each direction.

### **Banking Connections**

Choose a good bank doing South and Central American business, call on it and explain your problems. If your foreign trade requires financing, make arrangements for the discounting of your drafts or for advances to be made thereon, so that the bank will place you in a position where you can grant the necessary credits to your cus-

Make it a point to periodically visit your bank and discuss your business, your clients and your plans, all of which tends to closer relationship. Make your bank your confidant in reference to your business, and do not be afraid to thoroughly discuss your problems with it, as such procedure will help you and inspire confidence.

### Shipping and Packing

Pack your merchandise securely, so that it will stand rough handling. Always use new cases. Remember that

each package will probably be thrown about in no careful manner. Always follow your customer's instructions, because he receives goods from many different merchants, both European and American, and what he tells you is the result of long experience.

If the merchandise you are selling is packed in small pasteboard boxes and your client instructs you to use small wooden boxes instead, follow his directions, because in all probability the reason for his request is that he would have to pay duty on the pasteboard boxes, while the wooden boxes would be free of duty.

If your customer requires the gross, legal and net weights, give them as accurately as you possibly can, and avoid fines in the Custom House. The gross weight of a package is its total weight ready for shipment. The legal weight equals the gross weight less that of the outside box or case, while the net is the weight of the merchandise only.

For instance, the net weight of a case containing soap would be equal to the weight of the soap by itself; the legal weight would be the sum of the weights of the soap and the cardboard boxes; the gross weight would consist of the sum of the weights of the soap, the cardboard boxes and packing case. Should there be no cardboard boxes then the legal and net weights would be alike.

#### Metric System

Remember that throughout the Latin-American countries the metric system is used and therefore always give the various weights in kilos and grammes. One kilo equals 2.2046 pounds and contains 1,000 grammes. To change pounds to kilos, divide the number of pounds by 2.2046. Steamship companies have the privilege of charging freight either according to the cubic measurements of the

cases or their weights, on the basis of 40 cubic feet per ton, whichever provides them with the larger return, and, except on very heavy merchandise, freight is usually charged on the basis of the cubic measurement of the cases. Therefore, as this is an important item, pack the merchandise in as small a volume as possible, consistent with safety. Avoid fractions of inches in the measurements of the cases, as the steamship companies will charge for a whole inch.

Marking

Let the marking on your cases be as clear as possible, preferably stencilled. Many countries impose heavy fines if the cases are brush marked, and, in order to avoid costly mistakes, it is advisable to make a general rule that all cases be stencilled.

A case to be properly marked should have only your customer's shipping mark and name of town of destination on both ends, and the measurements as well as the gross, legal and net weights in kilos on the cover. Avoid covering the cases with your brands or trade marks.

If for advertising purposes you insist upon their presence, place them on the front and back of the case, so that they are less likely to be mistaken for shipping marks.

#### Consigning

Preference should always be given to the consignment to "Order," as it makes the merchandise the property of the holder of the bill of lading, whereas, when consigned to the customer direct, possession of the merchandise cannot be obtained by the collecting bank until the bill of lading has been endorsed by the consignee.

Banks much prefer to negotiate drafts having docu-ments attached consigned to "Order," because, until such documents are delivered, the merchandise is collateral security for the bank's advances. In some countries, although the bill of lading may be drawn to "Order" and endorsed in blank, the Custom House authorities consider the mer-chant named in the consular invoice to be the rightful owner of the property.

When dealing with those countries, special care should be exercised and a conference with your bankers is ad-

visable.

#### Invoicing

The greatest accuracy and clearness should be predominant features of an invoice. The gross, legal and net reights of each and every package should be mentioned. The detailed contents of every package case should be given. Do not leave anything to the imagination or make it necessary for your customer to guess at what you mean

Remember that many of the abbreviations and signs in common use in this country are unknown in other countries. Enter in detail, in the invoice, all your various charges such as cartage, ocean freight, consular charges, insurance, interest and banking charges, so that the total of your invoice and the amount of your draft correspond. If you employ the services of a forwarding agent, close your invoice when you have charged all your own expenses, such as cost of merchandise, railroad freight, etc., and let your forwarding agent make a separate invoice for the shipping expenses.

It is always preferable, almost essential, to make the invoice in the language of the country of destination. If the shipment is destined to Brazil and you have no one who can write Portuguese, make it out in French. Even English is preferable to Spanish. The same suggestion

applies to your letters.

#### Consular Declarations

Consular Declarations should preferably be made out in the language of the country of destination. If this is not practicable, write them in English. Be most careful to apply to your merchandise the classification to which it really belongs, as otherwise excess duty may be charged, for which you might properly be held accountable.

If your client gives you instructions on the subject, fol-low them to the letter. A good method is to always request your customer, when ordering, to state how he wants the shipment, or various parts thereof, declared. Study carefully the consular requirements of the country to which you are making the shipment and conform to them.

#### Drawing

When a sight or time draft is attached to a complete set of shipping documents and handed to your bank for collection or discount, definite instructions should be given as to what action the bank should take in case the draft is not honored when presented.

If you have an agent located at the point of destination, you should state whether the bank or its correspondents can follow his instructions, should events make it desirable to refer to him. Remember that practically all over South and Central America merchants have the right to await the arrival of the merchandise before accept-

ing a time draft or paying a sight draft.

Bear in mind that in those countries the documents attached to a time draft must always be delivered to the drawee against his acceptance. For further particulars

on the subject, refer to your bank.

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59-61 Pearl St., New York City, U.S.A.

## Facts That Exporters Should Know About New Zealand Trade

Prepared by Consulate-General of the United States, Auckland, New Zealand

The Dominion of New Zealand is composed of two principal islands, with many adjacent small islands, covering an area of 104,751 square miles, being a little smaller than Great Britain and Ireland, with a coast line some over 4,330 miles, and a total population of about 1,200,000. The principal cities are Auckland with a population of 120,000; Wellington with 85,000, Christchurch with 86,000, and Dunedin with 70,000, and many smaller thriving cities. The country is rich in natural resources with a delightful climate, and the outlook is encouraging. The Consular District comprises the entire Dominion with Consular Agencies at Wellington. Christchurch and Dunedin.

#### Resources and Exports

The natural resources of New Zealand are many and extensive, which means ample purchasing power, as well as the rapid development of the country. The raising of cattle and sheep is the leading industry, and provided about 80 per cent of the exports of the country during 1915, as follows: Wool, \$50,552,595; frozen meat, \$36,601,475; butter, \$13,142,592; cheese, \$13,185,572; tallow, \$3,799,899; sheepskin, \$4,022,197, and hides, \$2,463,369, out of a total export of \$154,506,080. The export of gold for 1915 amounted to \$8.245,542, and kauri gum to \$1,358,401. The per capita wealth of New Zealand is well up in the scale, being about \$2,227, with a foreign trade of about \$130 per capita per annum; being greater than that of any other country. Her natural products consist of gold, copper, coal and other minerals, kauri gum, timber, etc., and the future of the country is promising.

#### Banking Facilities Improving

The banking facilities between the United States and New Zealand are far short of those between England and this Dominion, but they are improving and should be quite sufficient to handle the increasing trade. Following is a list of the more important banks in Auckland doing a foreign exchange business: National Bank of New Zealand (American Agents, Canadian Bank of Commerce and Bank of British North America, New York), Union Bank of Australia (American Agents, Canadian Bank of Commerce, International Banking Corporation and Brown Bros. & Co., New York City.) Commercial Bank (American Agents, Irving National Bank and National City Bank of New York, New York City), Bank of New Zealand (American Agents, Canadian Bank of Commerce, J. P. Morgan & Co., and Bank of British North America, New York City), Bank of New South Wales (American Agents, Standard Bank of South Africa, Ltd., New York City), and Bank of Australasia (American Agent, International Banking Corporation, New York City).

#### Opening for American Goods in New Zealand

Manufacturers and exporters should understand that American goods and machinery, so far as they have been introduced, stand well in New Zealand. This being an English colony the tendency is to favor English goods, and it is now up to American interests to enlighten this part of the world as to the finer points of American goods and wares. American interests have been gaining rapidly in this country, but are getting only a small proportion of this business. In 1915 American exporters supplied about 14 per cent of the imports, against 9 per cent for 1914, and these consisted largely of articles in which America excels, such as builders' hardware, drugs and medicines, agricultural implements, automobiles, rubber tires, office furniture and supplies, dental supplies, electrical specialties, petroleum products, etc., while the United

Kingdom supplied upwards of 73 per cent. The imports for 1915 amounted to \$105,743,371 and will greatly increase within the next few years. Treat this trade fairly and you will have nothing to fear. Do not dump shoddy goods here, for the people will not stand for it.

#### Nature and Amount of Imports

Imports into New Zealand consist principally of manufactured articles, since there are but few factories in this Dominion, save shoe factories and woolen mills; and it will be many years before these conditions are greatly changed, for wages are high and there is more money in agriculture, stock raising and dairying. The imports for 1915 were valued at \$105,743,371, against \$106,362,691 for 1914; of which the United States supplied \$12,654,107 and \$11,110,054 respectively; while for the first six months of 1916 the United States sold merchandise to this country to the value of \$9,258,029. In 1915 American manufacturers and producers supplied merchandise valued as follows: Shoes \$153,460; drapery, textiles and haberdashery \$542,167; drugs and chemicals \$474,888; fresh and dried fruits \$882,910; hardware \$270,281; glassware \$247,194; iron and wire \$461,967; leather and manufactures, \$311,928; machinery, \$1,217,828; automobiles, motorcycles, etc., \$1,842,948; oils, benzine, gasoline, etc., \$2,333,540; tobacco \$405,691; and tools and implements \$526,473.

#### Shipping Facilities with New Zealand

The matter of ocean transportation is an important factor at present to the New Zealand importer and it is a question American manufacturers and exporters should give careful attention for it is up to them to get their products forward as speedily as possible and at the lowest rates, even though the purchaser pays the freight. The party who gives the best facilities in these matters when prices are equal, is bound to get business in this part of the world; so it will pay to give these matters special attention. From the West Coast there are two passenger and freight lines with sailings every 28 days each, owned and controlled by the Union Steamship Company of New Zealand, Ltd., with offices at San Francisco and Vancouver; one from San Francisco to Wellington, the other from Vancouver to Auckland.

#### Tariff Matters of Interest

The United Kingdom and possessions enjoy preferential duty on 193 items out of a total of 483, consisting principally of luxuries and articles manufactured, or that might be manufactured, in this Dominion. The preferential duties carry from 4 per cent on a few small items to 10 per cent on such important items as provisions, drugs and chemicals, manufactures of leather, china and glassware, fancy goods, musical instruments, firearms, hardware and many manufactures of iron or steel and the more important lines of machinery; to 12½ per cent on preserved fruits and milk, furniture, plate glass, stationery, tinware; with 20 per cent on cardboard, print paper, iron boiler plates, iron pipes, iron plates, iron or steel cable; and even 25 per cent in a very few cases; while the non-preferential lines are fresh fruits, tobacco and cigars, spirits, clothing and textiles, leather, oils, fertilizers, etc. Tariff rates on special articles can be had from the Foreign Trade Advisers, Department of State, Washington, D. C., or from this Consulate-General. For months yet the preferential duty in favor of the United Kingdom will have little effect on shipments from that country for the reason that manufacturers are unable to

fill orders in many lines, so this is an opportune time for American interests to get a foothold that may be profitable

and lasting.

Only first class commercial travelers with Anglo-Saxon names, familiar with foreign manners and customs, should be sent to this field; such as succeed at home, for conditions are much the same here, save this is British territory, and sympathies are strongly with the mother country at this time. Commercial travelers are required to deposit with the Customs Officers at the port of entry, the amount necessary to cover the duty due on their samples, and the further sum of ten pounds (£10 or \$48.66) on account of revenue tax on income. Corporate bodies are required to pay 5 per cent and private parties 2½ per cent on their net profits, which must not be less than 5 per cent of the invoice cost of the goods sold in the country. On leaving the country they receive the amount deposited for duty upon proof of the re-exportation of the samples, less amount deducted for income tax as per schedule of sales made in the Dominion.

#### Catalogs for Consulate General

This Consulate General makes use of all catalogs and price lists received, either by placing them on file for use of the merchants of this Consular district or by distributing them, and it would be to your advantage to have your catalogs and price lists sent to this Consulate General. It might be well to file your confidential prices or discounts, to be consulted by dealers, these to be filed on separate sheets, letter size, for use in special file. The catalogs should be in English, that being the language of the country. In this connection I would call attention to the fact that catalogs would be much more useful if they were issued in standard sizes (say 3x8 inches for small catalogs and folders, and 6x8, 9x8, 12x8, etc.), since they could be more conveniently filed, and would not be so liable to find the waste basket. I would suggest that American manufacturers take this matter up and see if some standard cannot be adopted.

#### Don'ts To Be Carefully Noted

Don't fail to pay full postage, which means 3 cents for each letter weighing one ounce, and 3 cents for each additional ounce. Don't expect to secure much New Zealand trade without strong effort. Don't sent your customer something different from what was ordered, simply because you happen to think it is as good or better. Don't fail to mark your cases very clearly on top, one side, and one end with characters at least 2½ inches high. Don't fail to pack everything well. Don't look for immediate results—be willing to work and wait.

In conclusion it may be well to state that this Consulate

General is at all times ready and entirely willing to furnish any information in its power to American manufacturers and exporters, but it should be borne in mind that department regulations prohibit a consular officer from reporting the financial standing of business houses, collecting bills, or acting as the agent of any firm or persons or in any way acting as special commercial representa-

tive.

## VILOUDAKI & CO.

Telegraphic Address: VILOUDAKI, SHANGHAI. Codes Used: Western Union, Lieber's, A-1, A.B.C. 5th Edition, Bentley's and Private.

#### EXPORTERS AND IMPORTERS Shanghai, China

Snanghai, Lnina

Exports: Peas and Beans, Peanuts and Walnuts,
Sesamum Seeds, Rape and other Seeds, Raw Cotton,
Cotton Wastes, Vegetable Oils, Vegetable Tallow,
Callnuts, Tumeric, Rhubarb, Tobacco Leaf, Crude
Camphor, Raw Silk, Waste Silk, Silk Goods, China
Grass, Albumen, Eggyelk, Antimony (Crude and
Regulus), Wolframite, Hides, etc.
Imports: Dyes and Chemicals, Cotton Piece Goods,
Tools, etc.; also various kinds of Machinery.

#### ICE IN THE PACIFIC

Fraser River is very seldor frozen over at New Westminister and navigation is hardly ever impeded. Burrard Inlet is always open, Northward of Vancouver Island the inlets freeze over 8 to 12 inches thick, and ice occasionally extends 25 miles from the innermost part. Skeena River also freezes in the upper part but seldom near the coast. Nass River also freezes over and in severe weather of winter down to its mouth.

#### Ice in Northern China Ports and Further Northward

The Pei Ho is blocked from the middle of December till the middle of March and field ice extends 30 miles

from the mouth

The Liau Ho is frozen over 4½ months during the year. or from the middle of November to the end of March. In the Amur, ice forms about the middle of October, when navigation for sailing ships ceases until the beginning of May.

The sea of Okhotsk is covered with ice from November

to April but the main entrance is always open.

On the southeast coast of Kamchatka, the bays, coves and rivers are frozen over in ordinary winters, but seldom too thick to prevent passage by breaking or cutting.

#### Ice Period in Japan

Ice may be met with during the winter months in Yezo Strait, Kunashiri Channel and Yetorup Strait,

#### Ice in the Southern Hemisphere

There are no ports to which general trade is carried on that are closed by ice in the Southern Hemisphere but obstruction by bergs and floe ice is met with in all high south latitudes, especially by those en-gaged in the Australian and New Zealand trade.

In these seas most bergs are seen in the summer months (November to January inclusive). In February the limit in the South Atlantic extends northward to about 39 degrees south, while in August they are not seen northward of 45 degrees south.

Between New Zealand and Cape Horn, ice bergs must

be expected to be encountered southward of 50 degrees

south

Between the Cape of Good Hope and Tasmania, ice bergs must be looked for from 40 degrees to 45 degrees south, and in any latitude further south.

### PRINCIPAL COALING STATIONS Indian Ocean and China Seas

Aden, Algoa, Amoy, Bangok, Batavia, Beira, Bombay, Bussorah, Bushire, Calcutta, Canton, Chefoo, Coconada, Colombo, Dairen (Dalny), Delagoa Bay, Deli, Galle, Hakodadi, Hankow, Hongkong, Jeddah, Jibuti, Karatzu, Keelung, Kobe, Kurrachee, Labuan, Madras, Manila, Massowah, Mauritius, Maulmein, Mombasa, Muroran, Nagasaki, Natal, Padang, Penang, Perim, Port Said, Rangoon, Sabang (Pula Way, North Sumatra), Saigon, Sandakan, Sarawak, Seychelles, Shanghai, Singapore, Soerabaia, Suakin, Swatow, Suez, Tientsin, Trincomalee, Yokohama, Zanzibar. lee. Yokohama, Zanzibar.

#### Pacific (North and South) and Australia

Adelaide, Acapulco, Albany, Astoria, Auckland, Bris-Adelaide, Acapulco, Albany, Astoria, Auckland, Brisbane, Coronel, Dunedin, Esquimalt, Fremantle, Greymouth, Guayaquil, Hobart, Honolulu, Invercargill, Iquique, King George's Sound, Lota, Littleton, Mazatlan, Melbourne, Moji, New Westminster, Nelson (N. Z.), Newcastle (N. S. W.), Otago,, Panama, Pauta, Perth, Port Pirie, Portland (Ore.), San Diego, San Francisco, Seattle, Suva (Fiji Islands), Sydney, Taboga, Tacoma, Tahiti, Tamsui, Thursday Island, Townsville, Valparaiso, Boat Harbor Nanaimo, Union Bay, Lady Smith, Victoria (V. I.), Vladivostok, Wakamatsu.

## United States Court for China

(Chapter 3,934, Prescribing the Jurisdiction of the Court.)

Be it Enacted by the Senate and the House of United States of America in Congress Assembled, That a Court is hereby established to be called the United States Court for China, which shall have jurisdiction in all cases and judicial proceedings whereof jurisdiction may now be exercised by United States Consuls and Ministers by Law and by virtue of Treaties between the United States and China, except in so far as the said jurisdiction is qualified by Section 2 of this Act. The said Court shall hold session at Shanghai, China, and shall also hold sessions at the cities of Canton, Tientsin, and Hankow at stated periods, the dates of such sessions at each city to be announced in such manner as the Court shall direct, and a session of the Court shall be held in each of these cities at least once annually. It shall be within the power of the judge, upon due notice to the parties in litigation, to open and hold Court for the hearing of a special cause at any place permitted by the treaties, and where there is a United States Consulate, when, in his judgment it shall be required by the convenience of witnesses, or by some public interest. The place of sitting of the Court shall be in the United States Consulate at each of the cities respectively.

That the seal of the said United States Court for China shall be the arms of the United States, engraved on a circular piece of steel of the size of a half dollar, with the words on the margin, "The Seal of the United States Court for China."

The seal of said Court shall be provided at the expense of the United States.

All writs and processes issuing from the said Court, and all transcripts, records, copies, jurats, acknowledgements and other papers requiring certification or to be under seal, may be authenticated by said seal, and shall be signed by the clerk of said Court. All processes issued from the said Court shall bear test from the day of such issue.

Sec. 2. The Consuls of the United States in the cities of China to which they are respectively accredited shall have the same jurisdiction as they now posses in civil cases where the sum or value of the property in-volved in the controversy does not exceed five hundred Dollars United States money, and in criminal cases where the punishment for the offense charged cannot exceed by law one hundred dollars' fine or sixty days' imprisonment, or both, and shall have power to arrest, examine, and discharge accused persons or commit them to the said Court. From all final judgments of the Consular Court either party shall have the right to appeal to the United States Court for China: Provided. Also, That appeal may be taken to the United States Court for China from any final to the United States Court for China from any final to the Consular Courts of the United States. judgment of the Consular Courts of the United States in Korea so long as the rights of Extra-territoriality shall obtain in favor of the United States. The said United States Court for China shall have and exercise supervisory control over the discharge by Consuls and Vice-Consuls of the duties prescribed by the laws of the United States relating to the estates of decendents in China. Within sixty days after the death in China of any citizen of the United States or any citizen of any territory belonging to the United States, the Consul or Vice-Consul whose duty it becomes to take possession of the effects of such deceased person under the laws of the United States shall file with the clerk of said Court a sworn inventory of such effects, and shall, as additional effects come from time to time into his possession, immediately file a supplemental inventory or inventories of the same. He shall also file with the clerk of said Court within the said sixty days a schedule under oath of the debts of said decendent, so far as known, and a schedule or statement of all ad-

ditional debts thereafter discovered. Such Consul or Vice-Consul shall pay no claims against the estate without the written approval of the judge of said Court, nor shall he make sale of any of the assets of said estate without first reporting the same to said judge and obtaining a written approval of said sale, to said Court, and the amount derived therefrom. The said judge shall have power to require at any time reports from Consuls and Vice-Consuls in respect to all their acts and doings relating to the estate of any such deceased person. The said Court shall have power to require, where it may be necessary, a special bond for the faithful performance of his duty to be given by any Consul or Vice-Consul into whose possession the estate of any such deceased citizen shall have come in such amount and with such securities as may be deemed necessary, and for failure to give such bond when required or for failure to properly perform his duties in the premises, the Court may appoint some other person to take charge of said estate, such person having first given bond as aforesaid. A record shall be kept by the clerk of said Court of all proceedings in respect of any such estate under the provisions hereof.

Sec. 3. That appeals shall lie from all final judgments of decrees of said Court to the United States Circuit Court of Appeals of the ninth judicial circuit, and thence appeals and writs of error may be taken from the judgments or decrees of the said Circuit Court of Appeals, to the Supreme Court of the United States in the same class of cases as those in which appeals and writs of error are permitted to judgments of said Court of Appeals in cases coming from District and Circuit Courts of the United States. Such appeals or writs of error shall be regulated by the procedure governing appeals within the United States from the District Courts to the Circuit Courts of Appeal, and from the Circuit Courts of Appeal to the Supreme Court of the United States, respectively, so far as the same shall be applicable and the said Courts are hereby empowered to hear and determine appeals and writs of error so taken.

Sec. 4. The jurisdiction of said United States Court, both original and on appeal, in civil and criminal matters, and also the jurisdiction of the Consular Courts in China, shall in all cases be exercised in conformity with said treaties and the laws of the United States now in force in reference to the American Consular Courts in China, and all judgments and decisions of said Consular Courts, and all decisions, judgments and decrees of said United States Court, shall be enforced in accordance with said treaties and laws. But in all such cases when laws are deficient in the provisions necessary to give jurisdiction or to furnish suitable remedies, the common law and the law as established by the decisions of the Courts of the United States shall be applied by said Court in its decisions and shall govern the same subject to the terms of any treaties between the United States and China.

Sec. 5. That the procedure of the said Court shall be in accordance so far as practicable with the existing procedure prescribed for Consular Courts in China in accordance with the Revised Statutes of the United States; Provided, However, That the Judge of the said United States Court for China shall have authority from time to time to modify and supplement said rules of procedure. The provisions of sections forty-one hundred and six and forty-one hundred and seven of the Revised Statutes of the United States allowing Consuls in certain cases to summon associates shall have no application to said Court.

Sec. 6. There shall be a district attorney, a marshal, and a clerk of said Court with authority possessed by the corresponding officers of the District Courts in the United States as far as may be consistent with

the conditions of the laws of the United States and said treaties. The judge of said Court and the district attorney, who shall be lawyers of good standing and experience, marshal, and clerk shall be appointed by the President, and with the advice and consent of the Senate, and shall receive as salary, respectively, the sums of eight thousand dollars per annum for said judge, four thouand dollars per annum for said district attorney, three thousand dollars per annum for said marshall and three thousand dollars per annum for said clerk. The judge of the said Court and the District Attorney shall, when the sessions of the Court are held at other cities than Shanghai, receive in addition to their salaries their necessary expenses during such sessions not to exceed ten dollars per day for the judge and five dollars per day for the district attorney.

Sec. 7. The tenure of office of the judge of said Court shall be ten years, unless sooner removed by the President for cause; the tenure of office of the other officials of the Court shall be at the pleasure of the President.

Sec. 8. The marshal and the clerk of said Court shall be required to furnish bond for the faithful performance of their duties, in sums and with sureties to be fixed and approved by the judge of the Court. They shall each appoint, with the written approval of said judge, deputies at Canton and Tientsin, who shall also be required to furnish bond for the faithful performance of their duties, which bonds shall be subject, both as to form and sufficiency of the sureties, to the approval of the said judge. Such deputies shall receive compensation at the rate of five dollars for each day the sessions of the Court are held at their respective cities. The office of marshal in China now existing in pursuance of section forty-one hundred and eleven of the Revised Statutes is hereby abolished.

Sec. 9. The tariff of fees of said officers of the Court shall be the same as the tariff already fixed for the Consular Courts in China subject to amendment from time to time by order of the President, and all fees taxed and received shall be paid into the Treasury of the United States.

Approved June 30, 1906.

## Sixtieth Congress, Sess. 11, 1909, Chap. 235

The judicial authority and jurisdiction in civil and criminal cases now vested in and reserved to the Consul-General of the United States at Shanghai, China, by the Act of June thirtieth nineteen hundred and six entitled "An act creating a United States Court for China and prescribing the jurisdiction thereof" shall subsequent to June thirtieth nineteen hundred and nine be vested in and exercised by a Vice-Consul-General of the United States to be designated from time to time by the Secretary of State, and the Consul-General at Shanghai shall thereafter be relieved of his judicial functions.

### Policy of the United States and Japan Regarding China

On Friday, November 2, 1917, the secretary of state for the United States and Viscount Ishii, the special Japanese ambassador, exchanged at the department of state at Washington the notes dealing with the policy of the United States and Japan in regard to China.

"Department of State, Washington, Nov. 2, 1917, "Excellency:

"I have the honor to communicate herein my understanding of the agreement reached by us in our recent conversations touching the question of mutual interests to our governments relating to the republic of China,

"In order to silence mischievous reports that have from time to time been circulated, it is believed by us that a public announcement once more of the desires and intentions shared by our two governments with regard to China is advisable.

"The governments of the United States and Japan recognize that territorial propinquity creates special relations between countries and consequently the government of the United States recognizes that Japan has special interests in China, particularly in the part to which her possessions are contiguous.

"The territorial sovereignty of China, nevertheless, remains unimpaired and the government of the United States has every confidence in the repeated assurances of the imperial Japanese government that while geographical position gives Japan such special interests they have no desire to discriminate against the trade of other nations or to disregard the commercial rights heretofore granted by China in treaties with other powers.
"The governments of the United States and Japan deny

that they have any purpose to infringe in any way the independence or territorial integrity of China, and they declare furthermore, that they always adhere to the principle of the so-called "open door," or equal opportunity for commerce and industry in China.

"Moreover, they mutually declare that they are opposed to the acquisition by any government of any special rights or privileges that would affect the independence or territorial integrity of China, or that would deny to the subjects or citizens of any country the full enjoyment of equal opportunity in the commerce and industry of China.

"I shall be glad to have your excellency confirm this understanding of the agreement reached by us.

'Accept, excellency, the renewal of my highest consideration.

"Robert Lansing." (Signed)

"His excellency, Viscount Kikujiro Ishii.

"Ambassador extraordinary and plenipotentiary of Japan, on special mission of Japan."

Washington, Nov. 2, 1917.—

Sir: I have the honor to acknowledge the receipt of your note of today, communicating to me your understanding of the agreement reached by us in our recent conversations touching the questions of mutual interests to our governments relating to the republic of China.

"I am happy to be able to confirm to you, under authorization of my government, the understanding in question set forth in the following terms:

(Here the special ambassador repeats the language of the agreement as given in Secretary Lansing's note.) "K. Ishii. (Signed)

"Ambassador extraordinary and plenipotentiary of Japan, on special mission.

"Hon. Robert Lansing, "Secretary of State.

#### The United States and Japan and China

By Mr. Aimaro Sato, Ambassador of Japan to the United States.

America, and to a large extent the Far East, both escaped the disaster and cruel devastation of the war. And the varied and various undertakings which will now be projected in the Americas and the Far East will far surpass those of Europe in number and magnitude, I think. As for Japan, she sincerely desires the frank and unreserved co-operation of the United States in different enterprises to be projected both in her own country and in China. If America and Japan enter into a thoroughly friendly and satisfactory economic partner-ship, there can be nothing happier than that. For it means a steady increase in the American capital investment in Japan and China. That spells also no small increase in the export trade of the United States to the Far East in iron and steel, rails, construction materials, various machinery, as well as in cotton, oil, wheat, and flour and many other products peculiarly native to the American soil.

Much has been said about the Japanese competition against the American goods in the markets of continental Asia. A casual glance at trade statistics should put to rights any such side glancing at the false altar. Take the principal articles Japan exports into China. In 1915 Japan sold to China \$25,904,000 worth of cotton yarn and thread. Cotton yarn and thread do not even enter among the leading articles of American export to China. There never was, and certainly is not now, enough American cotton yarn in China for the Japanese goods to compete against.

The chief item of American export into China in 1915 was illuminating oil. The United States sold China \$5,178,000 worth of it. Japan did not sell China enough illuminating oil to give it a place on her official trade table. In the fiscal year of 1916 the United States sold China \$1,249,000 worth of iron and tin plates. And they rank second on the list of the American exports to China. Iron and tin plates do not find their place among the principal exports of Japan to any country. On the other hand, Japan exported to China \$2,339,000 worth of fish and other marine products in 1915; and matches to the amount of \$1,932,000. Neither of these items looms large on the list of American exports to China. The things America has to sell to the continental Asian markets are essentially different from the articles Japan has to offer. There are not enough articles common to Japan and the United States to make the two countries serious competitors anywhere, more especially in China.

People in the United States seem to have an idea that

People in the United States seem to have an idea that Japan is virtually monopolizing the trade of China; that the American export trade to China is a mere and not even an altogether pleasant jest. A glance at the trade returns is highly instructive on this particular point. In the year 1915 Japan sold to China goods valued at \$81,662,000, according to our official figures. And the United States, according to her official figures, sold to China in the fiscal year 1916, ending with June 30, 1916, goods amounting in value to \$26,358,000. There is some disparity between the two figures, to be sure. But it must be a pleasant surprise to many Americans who have formed their idea of the decline of the American trade with China from some of the newspaper scare-heads. Moreover, China is Japan's second largest customer. Read in that light the

American showing is anything but a jest.

There is another thing which the people who speak of the commercial war between the United States and Japan constantly forget. It is that the United States is Japan's best customer, without exception. China comes next. Japan sold to the United States \$92,237,000 worth of her goods in 1913. That year her exports to China were valued at \$92,225,000. In 1915, Japan's exports to the United States amounted to \$102,071,000, and she sold to China in the same year only \$81,662,000 worth of goods. Of course these are abnormal times; at the same time, everything points to the ever-growing importance of the United States as our chief customer. It is simply idle to speak of the commercial war between the United States and Japan—especially from the standpoint of Japan and her interest.

## Agreement Between Japan and the United States

Notes exchanged at Washington, 30th November 1908. Letter from Sir Kogoro Takahira, Japanese Minister at Washington, to the Hon. Elihu Root, American Secretary of State.

Sir

The exchange of views between us which has taken place at the several interviews which I have recently had the honor of holding with you has shown that Japan and the United States, holding important outlying insular possessions in the region on the Pacific Ocean, the Governments of the two countries are animated by a common aim, policy and intention in the region.

Believing that a frank avowal of that aim, policy and intention would not only tend to strengthen the relations of friendship and good neighborhood which have immemorially existed between Japan and the United States,

but would materially contribute to the preservation of the general peace, the Imperial Government have authorized me to present to you an outline of their understanding of that common aim, policy and intention.

- 1. It is the wish of the two Governments to encourage the free and peaceful development of their commerce on the Pacific Ocean.
- 2. The policy of both Governments, uninfluenced by any agressive tendencies, is directed to the maintenance of the existing STATUS QUO in the region above mentioned, and to the defense of the principle of equal opportunity for commerce and industry in China.
- 3. They are accordingly firmly resolved reciprocally to respect the territorial possessions belonging to each other in the said region.
- 4. They are also determined to preserve the common interests of all Powers in China by supporting, by all pacific means at their disposal, the independence and integrity of China, and the principle of equal opportunity for commerce and industry of all nations in that empire.
- 5. Should any event occur threatening the STATUS QUO as above described, or the principle of equal opportunity as above defined, it remains for the two governments to communicate with each other in order to arrive at an understanding as to what measures they may consider it useful to take.

If the foregoing outline accords with the view of the Government of the United States, I should be gratified to receive your confirmation.

From Hon. Elihu Root, American Secretary of State, to Sir Kogoro Takahira, Japanese Minister at Washington.

Your Excellency:

I have the honor to acknowledge the receipt of your note of today setting forth the result of the exchange of views between us in our recent interviews defining the understanding of the two Governments in regard to their policy in the region of the Pacific Ocean.

It is a pleasure to inform you that this expression of mutual understanding is welcome to the Government of the United States as appropriate to the happy relations of the two countries, and as the occasion for a concise mutual affirmation of that accordant policy respecting the Far East which the two Governments have so frequently declared in the past,

- I am happy to be able to confirm to your Excellency, on behalf of the United States, the declaration of the two governments embodied in the following words:
- 1. It is the wish of the two Governments to encourage the free and peaceful development of their commerce on the Pacific Ocean.
- 2. The policy of both Governments, uninfluenced by any aggressive tendencies, is directed to the maintenance of the existing STATUS QUO in the region above mentioned, and to the defense of the principle of equal opportunity for commerce and industry in China.
- 3. They are accordingly firmly resolved reciprocally to respect the territorial possessions belonging to each other in the said region.
- 4. They are also determined to preserve the common interests of all Powers in China by supporiting by all pacific means at their disposal, the independence and integrity of China, and the principle of equal opportunity for commerce and industry of all nations of that empire.
- 5. Should any event occur threatening the STATUS QUO as above described, or the principle of equal opportunity as above defined, it remains for the two governments to communicate with each other in order to arrive at an understanding as to what measures they may consider it useful to take.

### Trade Opportunities in China

Any commercial publication that does not urge with all its power that American exporters should devote



serious attention to China as a market for American goods is slighting one of its most important missions. Within the Chinese empire there are some 600,000,000 people and they offer a market which is practically a virgin one.

Attention is drawn to the following paragraphs from an article prepared by Julian H. Arnold, formerly commercial attache at Peking of the Bureau of Foreign and Domestic Commerce of the United States:

Americans in China have been heard to criticize our manufacturers and bankers at home for focussing their attention so closely on South America that they fail to heed the call of opportunity in the Far East. Which-ever field will yield the greater profit to those who may introduce and extend the use of American manufactured products, it is true that the Far Eastern republic has immense undeveloped resources and a peace-loving. industrious, and hardy population, which is eight or nine times as great as that of the whole South America. Morever, Americans have a valuable asset in China—the good will of the people. I have traveled all over this vast country and have found that no people on the face of the earth occupy a warmer place in the hearts of the Chinese than do Americans. For this friendly feeling we may thank our 2,500 American missionaries, with their schools, hospitals, and chapels in the most remote sections of the country; the fact that we took no part in the billion-dollar opium imports into China and that we have not made war upon her nor exacted from her territorial concessions; our adherence to the open door policy, and especially the remission by the United States of a considerable portion of the Boxer indemnity.

About 80 per cent of the American trade in China is handled by other than American firms. Very little direct business is done between merchants abroad and Chinese firms. It is almost as true today as it was when Christopher Columbus tried to go to the Orient, that the only way to have trade with the Chinese people is to come and get it. When I was consul general at Hankow, I asked a number of Chinese merchants why they were not doing business with the United States. The invariable reply was "The United States has no import and export house in China." The Germans and the Japanese have. They do not sit in their Shanghai offices waiting for trade to filter through their "compradores" (Chinese middlemen, or agents) as American merchants in China have been known to do.

The American merchant must get closer to the Chinese producer and consumer. He must train men in the language and customs of the Chinese people. He must be willing to make substantial outlays for advertising and for soliciting business. He must learn to quote prices c. i. f. Shanghai; the Chinese buyer wants to know what goods will cost laid down in his shop, and not in New York nor in Podonk. He must adapt his goods, where possible, to the peculiar demands of the Chinese market, as the Japanese are doing. For example, Chinese druggists often want in 2, 4 or 6 ounce bottles drugs that American exporters persist in putting up in pint bottles. A few Chinese characters on a label will often help to establish a market for articles that might otherwise find a very limited sale. The Chinese dealer attaches great importance to the "chop," or trade mark, which, once established, has in itself a distinct value and which, to prevent imitations, should be registered through the consulate general of Shanghai and through the embassy at Pekin.

Generally speaking, American manufacturers would do well to place their China agencies with American firms. Some American articles have been successfully marketed by European firms in China but for the most part, these articles have not competed with manufactures of the country holding the agency. Moreover, European firms in China have been known to accept American agencies to keep the goods they represent out of the market.

## Regulations Prohibiting Trading with the Enemy

No. 10 of 1915

King's Regulations made under Article 155 of "The China Order in Council, 1904," and Article 13 of the "The China (Amendment) Order in Council. 1907."

Whereas Great Britain is at war with Germany, with Austria-Hungary, and with Turkey.

And Whereas, His Majesty the King has, by and with the advice of His Privy Council, issued Proclamations prohibiting any person resident, carrying on business, or being in the British Dominions to trade with the Enemy

And Whereas, His Majesty the King has, by and with the advice of His Privy Council, issued a Proclamation applying, as therein provided, as from the 26th day of July, 1915, the Proclamation against Trading with the Enemy to trading by British subjects with and person or body of persons of enemy nationality resident or carrying on business in China, Siam, Persia or Morocco.

And Whereas, by the "Trading with the Enemy Act, 1914," and by the "Trading with the Enemy Amendment Act, 1914," provision has been made with respect to penalties for Trading with the Enemy and other purposes connected therewith.

And Whereas, in accordance with the Foreign Jurisdiction Act, 1890, and the China Order in Council, 1904, made thereunder, His Majesty's Minister in China has power conferred upon him to make as therein provided regulations for the peace, order and good government there of British subjects, as defined by the said Order.

there of British subjects, as defined by the said Order.
And Whereas, by King's Regulations No. 17 of 1914,
(The Treasonable Insurance Regulations, 1914) provision was made for the summary trial and punishment of any person subject to the jurisdiction of His Majesty's Supreme Court for China committing offense in regard to prohibited insurances as therein defined.
And Whereas, It is expedient that King's Regulations

And Whereas, It is expedient that King's Regulations should now be made extending to all persons, firms and corporations subject to the aforesaid jurisdiction, and, in so far as circumstances admit, the prohibitions and conditions set out in the said Proclamations and to provide penalties for breaches thereof.

It is hereby ordered as follows:

I. In the construction of these Regulations the following words shall have the meanings hereby assigned to them, unless there be something in the subject or content renugnant thereto, that is to say:

content repugnant thereto, that is to say:
"Outbreak of war" means 11 p. m. on August 4th,
1914, in relation to the German Empire, midnight on
August 12, 1914, in relation to Austria-Hungary, and
November 5th, 1914, in relation to Turkey, and the
colonies and dependencies of these Powers respectively.

"Enemy Country" means the territories of the German Empire, of the Dual Monarchy of Austria-Hungary, together with all the respective colonies and dependencies thereof, and the territories of His Imperial Majesty the Sultan of Turkey—other than any territory in the occupation of His Britannic Majesty or of his Allies.

"Enemy" means any person or body of persons of whatever nationality resident or carrying on business in the enemy country, and any person or body of persons of enemy nationality resident or carrying on business in China, Siam. Persia or Morocco. In the case of incorporated bodies, enemy character attaches only to those incorporated in an enemy country.

"Person" means British subject, firm or corporation.

II. Any person subject to the jurisdiction of His Majesty's Supreme Court for China who:

1 Pays any sum of money to or for the benefit of an enemy or

2. Compromises or gives security for the payment of any debt or other sum of money with or for the benefit of an enemy; or

3. Acts on behalf of an enemy in drawing, accepting, paying, presenting for acceptance or payment, negotiating or otherwise dealing with any negotiable instrument; or

4. Accepts, pays or otherwise deals with any negotiable instrument which is held by or on behalf of an enemy having at the time of such acceptance, payment, or dealing reasonable ground for believing that such instrument is held by or on behalf of an enemy;

5. Enters into any new transactions or completes any transaction already entered into with an enemy

in any stocks, shares or other securities; or

6. Directly or indirectly supplies to or for the use or benefit of or obtains from, an enemy country cr an enemy any goods, wares, or merchandise or directly or indirectly supplies to or for the use or benefit of, or obtains from, any person any goods, wares or merchandise, for or by way of transmission to or from an enemy country or an enemy, or directly or indirectly trades in or carries any goods, wares or merchandise destined for or coming from, an enemy country or an

enemy; or
7. Permits any British ship to leave for, enter or communicate with, any port or place in an enemy

country; or

Enters into any commercial, financial or other contract or obligation with or for the benefit of an

- enemy: or

  9. Takes part in any act or transaction prohibited

  subject of under any Proclamation dealing with the subject of trading with the enemy issued by His Majesty after the 25th day of June, 1915, and published in the manner provided by the Principal Order for the Publication of King's Regulations. Commits an offence and shall be liable, upon conviction, for each such offence to imprisonment for any term not exceeding three months, with or without hard labor, or to a fine not exceeding £50 or to both.
- Where an enemy has a branch locally situated TIT in British, allied or neutral territory-not being neutral territory in Europe, China, Siam, Persia or Morocco-transactions by or with such branches shall not be treated as transactions by or with an enemy.

Provided, however, that transactions hereafter entered into by any person resident, carrying on business.

or being in China:

(a) In respect of banking business with a branch situated outside the United Kingdom of an enemy

person, firm or company; or

(b) In respect of any description of business with a branch situated outside the United Kingdom of an enemy bank shall be considered as transactions with an enemy

Provided, that acceptance, payment or other dealings with any negotiable instrument which was drawn before the date of these Regulations shall not, if otherwise lawful, be deemed to be a transaction hereafter entered into within the meaning of this paragraph.

IV. If any company incorporated under the Or-1V. It any company incorporated under the Ordinances of the Colony of Hongkong, and keeping a local register within the limits of the principal order, contravenes the provisions of Section 4 of the Ordinance of that Colony entitled "Trading with the Enemy Amendment Ordinance 1915," such company shall be guilty of a breach of these regulations and shall be liable on conviction to a fine not exceeding

Any sum which, had a state of war not existed, would have been payable and paid to or for the benefit of an enemy, by way of dividends, interest or share of profits, shall be paid by the person by whom it would have been payable into an account to be entitled "The Enemy Divisions Account" at such incorporated bank, or banks, as the Minister shall by public notice appoint. Any sum so paid into "The Enemy Dividends Account" shall not be dealt with save on an order of the Supreme Court.

Any payment required to be made under this regulation shall be made:

- (a) within fourteen days after the commencement of these Regulations if the sum, had a state of war not existed, would have been paid before such commencement.
- (b) in any other case within fourteen days after it would have been paid.
- (2) If any person fails to make any payment within the time mentioned in this Regulation he shall, upon conviction, be liable to a fine not exceeding £50 or to imprisonment, with or without hard labor, for a term not exceeding three months, or to both.
- (3) The expression "dividends, interest or share of profits" for the purpose of this Regulation means any dividends, bonus or interest in respect of any shares, stock, debentures, debenture stock or other obligations of any Company, any interest in respect of any loan to a person carrying on business for the purposes of that business, and profits or share of profits of such a business, and, where a person is carrying on any business on behalf of an enemy, any sum which, had a state of war not existed, would have been transmissible by a person to the enemy by way of profits from that business shall be deemed to be a sum which would have been payable and paid to the enemy.
- VI. Where an act constitutes an offence both under these Regulations and under the Law of England as applied by the Principal Order, the offender shall be liable to be prosecuted and punished under either these Regulations or the Law of England as aforesaid, but shall not be liable to be punished twice for the same

VII. A prosecution for an offence under this Regulation shall not be instituted except by or with the consent of the Crown Advocate:

Provided, That the person charged with such an offence may be arrested and a warrant for his arrest may be arrested and a warrant for his arrest may be issued and executed, and such person may be remanded in custody or on bail notwithstanding that the consent of the Crown Advocate to the institution of the prosecution for the offence has not been ob-tained, but no further or other proceedings shall be taken until that consent has been obtained.

- (1) Any Court established under the Principal Order, on being satisfied on information on oath laid on behalf of the Minister, that there is reasonable ground for suspecting that an offence under these Regulations has been or is about to be committed by any person, may issue a warrant authorizing a British subject appointed by the Minister or by any Consular Officer in his own district and named in the warrant to inspect all books or documents belonging to or under the control of that person, and to require any British subject able to give any information with respect to the business or trade of that person to give that information, and, if accompanied by an Officer of the Court, to enter and search any premises to which the jurisdiction of the Court extends and which are used in connection with the business or trade, and to seize any such books or documents as aforesaid.
- (2) If any person having the custody of any book or document inspection of which has been authorized under this Regulation refuses or wilfully neglects to procure it for inspection, or if any such person who is able to give any information which may be required to be given under this Regulation refuses or wilfully neglects when required to give that information, that person shall, upon conviction, be liable to imprisonment for any term not exceeding three months, with or without hard labor, or a fine of £50, or to both.
- IX. Where any company has entered into a transaction or has done any act which is an offence under or other officer of the company, who is knowingly a party to the transaction or act shall be guilty of an offence under these Regulations and shall, upon conviction, be liable to imprisonment for any term not exceeding three months, with or without hard labor, or to a fine not exceeding £50, or to both.

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- X. Nothing in these Regulations shall be deemed to prohibit payments by or on account of enemies to persons resident, carrying on business, or being in His Majestys Dominions if such payments arise out of obligations, other than those of or relating to insurance or re-insurance of whatever nature, entered into before the outbreak of the war.
- XI. Nothing in these Regulations shall be deemed to prohibit anything which may at any time hereafter be expressly permitted by license granted by His Majesty or by a license given on behalf of His Majesty or by a Secretary of State or given on the like behalf by the Minister, whether such license be specially granted to individuals or be announced as applying to classes of persons.

XII. The Trading with the Enemy Regulations 1915 made on January 29th, 1915, are hereby repealed as from the 26th day of July, 1915.

XIII. These Regulations may be cited as the "Trading with the Enemy (Amendment) Regulations, 1915."

J. N. JORDON,

His Britannic Majesty's Minister.

Peking, July 12, 1915.

#### General License Under King's Regulations No. 10 of 1915

Whereas, Under the provisions of the King's Regulations No. 10 of 1915 prohibiting trading with the enemy all persons subject to the jurisdiction of His Majesty's Supreme Court for China were prohibited from doing certain things save so far as licenses might be issued enabling them to do so. And whereas, by paragraph XI of the aforesaid King's Regulations it is provided that nothing in such Regulations shall be taken to prohibit anything which shall be expressly permitted by the King's license or by the license given on His behalf by a Secretary of State or on the like behalf by His Majesty's Minister in China whether such license be specially granted to individuals or be announced to classes of persons—Now therefore, I, His Britannic Majesty's Minister in China, hereby announce as follows:

- (1) In this license the word "person" and "enemy" shall have the same meanings as are given to them in the said King's Regulations No. 10 of 1914.
- (2) Any person carrying on a retail business is permitted to supply for cash to an enemy articles of clothing, drugs, food-stuffs, wines, spirits, waters and other provisions and articles of ordinary household use or consumption and the necessities and accompaniments of daily life.

Any person is permitted to purchase for cash such articles from a retail business carried on by an enemy.

- (3) Any person at the date of this license occupying any land, building, flat, apartments or rooms belonging to an enemy is permitted to pay rent for the same to such enemy during the unexpired term of any existing lease or tenancy or during any renewal thereof.
- (4) Any person being the lessor of any land, building, flat, apartments or rooms which at the date of this license is in the occupation of an enemy is permitted to allow the continuance of such occupation during the unexpired term of any existing lease or tenancy or during any renewal thereof. Any person is permitted to supply board and lodging to an enemy.
- (5) Any person having at the date of this license in his or her employ an enemy performing services of a purely domestic nature is permitted to continue such employment and payment for such services during the unexpired term of any existing contract or during any renewal thereof.
- (6) Any person being at the date of this license in the employ of an enemy for the performance of services of a purely domestic nature is permitted to coninue in such service during the unexpired term of any sting contract or during the renewal thereof.

- (7) Any person supplying gas, water, electric current or telephonic communication is permitted to supply the same with the fittings necessary therefor to an enemy, and any person is permitted to receive and pay for such service when supplied by an enemy or enemy municipality.
- (8) Any British municipality is permitted to perform its accustomed services to or for the benefit of an enemy, and any person is permitted to take advantage of and pay for the accustomed services of an enemy municipality.
- (9) Any person residing within the limits of an enemy concession is permitted to pay the rates, taxes and dues levied by the municipality or other proper authority in such concession for the maintenance and administration thereof. Any person carrying on the profession of a medical practitioner, surgeon or dentist is permitted to attend and treat an enemy as a patient and any person desiring to do so is permitted to consult and obtain treatment from an enemy practicing medicine, surgery or dentistry, and to make payment for such services.

J. N. JORDON, His Britannic Majesty's Minister.

Peking, 29th July, 1917.



## Immediate Delivery

Bolts, Nuts, Chain Mild Steel, Belting Axes, Wire Rope Blacksmith Coal Logging Tools Peevies, Saws Steel Split Pulleys Wood Split Pulleys

# Mill & Mine Supply Co.

Phone Main 1167

317 First Ave. So., Seattle, U.S.A.

Cable Address: "Millmine" Seattle

## Customs Procedure and Suggestions

All merchandise arriving within the jurisdiction of the United States is subject to customs entry, which may be for Consumption (C. E.), Warehouse (W.H.), Immediate Transportation (I.T.) to interior ports, or Transportation and Exportation (T.&E.), that is in bond through the United States to a foreign territory.

When merchandise remains on board a vessel after the expiration of the legal time for discharging the same, the Collector shall take possession thereof, and merchandise not entered within the legal time will be sent by the Collector to General Order Warehouses.

The formalities incident to the entry of merchandise and payment of duties require a technical knowledge of the laws and regulations, and importers generally make use of the services of Custom House Brokers, who are licensed by the Collector to practise before the Custom House in accordance with the Act of June 10, 1910.

All merchandise arriving on one vessel and consigned to one consignee should be included in one entry, but goods arriving by different vessels may not be. For purposes of determining correct values and fixing proper rates of duty, 10 per cent or more of all shipments entered (except bulky, heavy articles, etc., unconditionally free goods, sack goods such as rice, etc.) are ordered by the Collector to the Appraisers' Store. As soon as the Appraiser has made his returns and the importer shall have made payment of any

increased duties found a release permit is issued.

In case a market value higher than that declared in the invoice and entry is found, or a different rate of duty is assessed, the importer on appeal will be heard by the board of General Appraisers. If the question is one of law and the decision of the General Appraisers is appealed from, by either the Government or the importer, the case goes to a higher tribunal, the Court of Customs Appeals.

Abandonment of merchandise may be made within 10 days after entry and relief from duties had, provided the portion so abandoned shall amount to 10 per cent or more of the value or quantity of the entry.

#### Invoices

Invoices must be made out on firm, durable paper, in a legible manner and on one side of the paper only, and must contain a correct, complete and detailed description of the merchandise and of the packages, coverings or other containers thereof; such description must include name, if any, by which each item is known to the trade in the country of exportation, and show the kind and quantity and component parts of the merchandise. In case of manufactured goods the manufacturer's number should be given for each article.

Invoices should also show the price per unit and cost of all packages, and expenses to put goods in condition for shipment, marine insurance, and prepaid freight, if any, and cost of Consular verification and should be made cut in the currency of the country of exportation, or if purchased, in the money and at the price actually paid, but if this price is below market, the facts should be noted on the Invoice or a sheet with explanation attached thereto.

Every invoice must state true character of goods and decribe them with sufficient accuracy that they may be identified upon examination. In case of food products, adulterated food or drugs or misbranded goods are prohibited and an affidavit that foods are not adulterated or misbranded should be attached to invoice blanks for which affidavits can be obtained at any United States consulate. Also all containers of food products (tins, bags or cartons) must show net weight on label.

All shipments destined for ports in the United States must be accompanied by an invoice sworn to before the United States consul, if valued at \$100, gold, or more. If value is less than \$100 the shippers' invoice, certified correct by himself, is sufficient.

Cases or bales should be numbered and numbers and marks shown on invoice. Contents of each package should be enumerated on invoice so that contents can readily be identified on examination.

Each case and package must be marked with the name of the country of exportation. Also all articles of foreign manufacture or production capable of being marked, stamped, branded or labeled without injury so as to indicate the country of origin found lacking in this requirement will be detained by the customs until properly marked by the consignee under customs supervision.

Bills of lading properly signed by the agents or the master of the vessel carrying the goods should be taken out and two copies of such bills of lading and one copy (the duplicate) of the invoice must be sent to the consignee of the goods at the port of destination and the quadruplicate invoice to agent at port of arrival if goods are for interior port.

These bills of lading as well as the invoice should show in detail the marks on the packages shipped. Vessels arriving at United States ports are compel-

Vessels arriving at United States ports are compelled to have in their possession for delivery to the officers of the customs copies of a manifest in which must be shown in detail the cargo of the vessel and to whom it is consigned. Also bill of health from the United States consul at port of departure.

If goods arriving at a United States port are intended for shipment to an interior city they should be consigned to an agent, a customs broker or agent of steamship line transporting the shipment to the United States, and notation made on bill of lading that goods are intended for forwarding from the port of first arrival.

Sufficient warehouse space both free and bonded is available at all ports for storage of cargoes and rates are low. Large shipments may be placed in bonded stores and duty paid only on the portion withdrawn for consumption.

#### Drawback

Drawback is as the name signifies a refund of duties paid on imported materials when same are exported in articles manufactured in the United States, also of goods subject to Internal Revenue Laws, when exported.

The purpose of the drawback law is to foster the manufacture of the country by giving the domestic manufacturer, in his competition in foreign markets, the benefit of free imported materials in the home market

The allowance extends to goods exported in the same condition as imported, provided the same has been in the uninterrupted custody of the government and duties paid amount to at least \$50 and exported within three years; to imported materials entering into manufactured articles when such materials shall so appear in the completed articles that the quantity or measure thereof may be ascertained. To protect the government and secure the rights of the exporter great care is required in the preparation of the papers and a strict compliance with the regulations is insisted upon.

#### American Ships Profit by Discount

Goods, wares and merchandise from foreign counttries which come to the United States in vessels of American registration will be accorded a discount of 5 per cent from the regulation duty imposed by tariff schedules. This reduction shall be given wherever it may be allowed without violation of any treaty obligations.

#### Preferential Tariffs

As a rule, articles of United States origin are subject to the same treatment in the customs of foreign countries as imports from other countries. In France, and

many of the French colonies most products imported from the United States are subject to the rates of the "general" tariff, while similar imports from other countries are admitted at the lower duties prescribed by the "minimum" tariff. Products from the United States, as well as those from all non-British countries, are likewise excluded from the reduced rates of the "British preferential" tariffs in force in Canada, Australia, New Zealand and the Union of South Africa, and the majority of the colonies of the British West Indies

Articles of United States origin are admitted into Cuba at lower rates than are imports from other countries. The reductions which were provided for by the reciprocity treaty, which became effective December 27, 1903, range from 20 to 40 per cent of the regular duties of the Cuba tariff. A special reduction of 20 per cent of the regular duties is granted in the case of the following articles of United States origin imported into Brazil: Condensed milk, certain manufactures of rubber, clocks and watches, paints and inks (not including writing fluids), varnishes, type-writers, scales, refrigerators, pianos, windmills, cement, dried fruit, furniture for schools, corsets and desks. On wheat flcur imported into Brazil from the United States there is a reduction of 30 per cent. These preferential duties in Brazil have not been extended to similar imports from other countries. There are no other countries granting special tariff concessions to imports from the United States.

The Philippine Islands are not a part of the customs jurisdiction of the United States and have a separate tariff, but all articles of United States origin, if shipped in through bill of lading, are admitted free of duty. In the Island of Guam, also, United States products imported direct are exempt from duty, while articles imported from other countries are subject to the rates of the local customs tariff. Tutuilla has also an autonomous tariff, but in this island United States products are subject to the same customs treatment as articles imported from foreign countries. The islands of Porto Rico and Hawaii are part of the customs territory of the United States. Articles imported into the canal zone are subject to the provisions of the customs tariff of Panama, and no tariff preference is granted on products from the United States. Articles consigned to the Panama Canal or intended for the use of the Panama Railway are, however, exempt from duty, whatever the place of origin.

#### Suggestions to Importers of Merchandise into the United States

The following are the only articles exempt from duty as the property of tourists arriving from abroad,

except such articles as are free by law:
Wearing apparel in actual use, or that has been in use, or that is necessary for the present comfort or convenience of the owner. Articles of clothing, which have not been in actual use and not necessary for the present comfort or convenience of the owner, are dutiable.

Professional books, implements, instruments and tools of trade, occupation, or employment of the person arriving. This includes theatrical wardrobes actuson arriving. ally belonging to actors arriving with the articles.

Personal effects, viz.: such articles as are worn on the person, or used in connection therewith. This includes jewelry that has been worn, or is in use by the owner, but only one watch is passed free for a single passenger.

Books, libraries, or parts of libraries (other than professional) that have been used abroad for not less

than one year.

Household effects that have been used abroad for

not less than one year.

Free entry of all of the above articles is conditional upon the fact that they are not merchandise nor intended for sale, but are simply the personal property in use, and intended for the use of the persons bringing them.

Passengers' declaration forms will be given to passengers during the voyage. These blanks are divided into two sections, one for the goods exempt from duty, according to the foregoing list, and one for dutiable articles. Passengers must fill these out carefully, giving full and true details of everything they have with them. If a family is arriving, the senior member may include everything belonging to the family in one declaration.

If the contents of one trunk or package exceed \$500 in value, or if the dutiable articles in any trunk or package are such that a proper examination cannot be made at the wharf, the trunk or package will be sent to the United States Appraiser's Store for examination and appraisement.

Particular attention is called to this provision of the Whenever any article subject to duty is found in baggage which was not at the time of making declaration mentioned by the person making declaration, such article shall be forfeited, and the person in whose baggage it is found shall be liable to a penalty of treble the value of the article.

The exemption from duty of household effects, and books that have been in use not less than one year, is not limited to those actually brought by passengers. They may be imported any time after the passenger's

arrival.

#### Customs Districts, Headquarters and Ports of Entry

#### Hawaii

Honolulu, Headquarters

Koloa Mahukona

Kahului

Astoria

Oakland

San Pedro

Hilo

#### Alaska

Juneau, Headquarters

Forty Mile Cordova Eagle Ketchikan Fairbanks Nome Unalaska St. Michael Sulzer Wrangell

Oregon

Portland, Headquarters Marshfield

Newport

#### San Francisco

San Francisco, Headquarters

Eureka

Port Harford

### Southern California

Los Angeles, Headquarters Campo

Calexico San Diego

Tia Juana

### Washington

#### Seattle, Headquarters

Aberdeen Laurier Anacortes Molson Northport Bellingham Port Angeles Port Townsend Blaine Chopaka Danville Roche Harbor Everett Scuth Bend Ferry Spokane Friday Harbor Sumas Tacoma

#### British Columbia

#### Vancouver, Headquarters

Abbottsford Nelson Revelstoke Cranbrook Fernie Rossland Victoria Grand Forks New Westminster Greenwood Prince Rupert Nanaimo

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## U. S. Pure Food and Drug Act of June 30, 1906

An act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors and for regulating traffic therein, and for other purpose, provides in brief:

That the shipment into any state or territory from any state or territory, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this Act, is hereby prohibited.

That the term "drug" as used in this Act, shall include all medicines and preparations recognized in the United States Pharmacopoeia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term "food" as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed or compound.

The Secretary of the Treasury shall deliver to the Secretary of Agriculture, samples of foods and drugs which are being imported into the United States and if it appears from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this Act, or is otherwise dangerous to the health of the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal under such regulations as the Secretary of the Treasury may prescribe.

Food Inspection Decision No. 154 requires that the quantity of the contents in all cases of food, if in package form, must be plainly marked, in terms of weight, measure or count on the outside of container. The quantity must be marked in terms of the largest unit of weight or measurement. Statements of weight shall be in terms of avoirdupois pounds and ounces, liquid measure in U. S. gallons of 231 cubic inches, and dry measure shall be in terms of U. S. standard bushel of 2,150.42 cubic inches and its customary divisions: Provided, that by like method, such statements may be in terms of metric weight or measure.

#### Meat Certificates

- (a) Meat and meat food products imported into the United States shall be accompanied by a certificate of official inspection of a character to satisfy the Secretary of Agriculture that they are not dangerous to health, and each package of such articles shall bear a label which shall identify it as covered by the certificate, which certificate shall accompany or be attached to the invoice on which entry is made.
- (b) The certificate shall set forth the official position of the inspector and the character of the inspection.
- (c) Meat and meat food products as well as all other food and drug products of a kind forbidden entry into or forbidden to be sold, or restricted in sale in the country in which made or from which exported, will be refused admission.

#### Declaration for Food or Drug Products

All invoices of food or drug products shipped to the United States shall have attached to them a declaration of the shipper, made before a United States consular officer, as follows:

I, the undersigned, do solemnly and truly declare that I am the ......... (Mfr., Agt. or Shipper) of the merchandise herein mentioned and described, and that it consists of food or drug products which contain no added substances injurious to health.

Dated at ...... this ...... day ......, 19....

Signed ......

#### Matches

Exporters to the United States shall state in their declaration on invoices that none of the matches covered by the invoice are white phosphorus matches. They shall also file with the consul at the time of presenting the invoice for certification a certificate of official inspection by the government of the country in which the matches were manufactured, which shall show that the matches are not white phosphorous matches.

The consul shall verify the official character of the officer issuing the foreign certificate of inspection, and shall forward the certificate with the invoice to the Collector of Customs of the port at which importation is to be made.

Importers will be required to make affidavit at the time of entry, stating, according to the best of their information and belief, that the shipment contains no white phosphorous matches.

In the absence of proper foreign certificates of inspection, importers will be required to furnish upon entry a bond in a penal sum equal to the duties on the matches conditioned upon the production of such certificate within six months.

#### The Seed Inspection Act

The Act approved August 24, 1912, entitled, "An Act to regulate foreign commerce by prohibiting the admission into the United States of certain adulterated grains and seeds unfit for seeding purposes," prohibits the importation into the United States of certain grains and other seeds unless they comply with certain standards promulgated by the Secretary of Agriculture in accordance with the said act.

A list of such standards and regulations governing them may be obtained from the Law Division of the Custom House.

#### Permits for Importation of Nursery Stock

Persons contemplating the importation of nursery stock shall first make application to the Federal Horticultural Board for a permit stating in the application the name and address of the exporter, the country and

locality where grown, the port of entry, and the name and address of the importer in the United States to

whom the permit should be sent.

Applications for permits should be made in advance of the shipment of the nursery stock, but if, through no fault of the importer, stock should arrive before the issue of a permit the stock will be held in customs custody at the risk and expense of the importer for a period not exceeding 20 days pending the issue of a permit.

Applications may be made by telegraph, in which case the information required above must be given.

#### Foreign Certificate of Inspection for Nursery Stock

Each certificate and copy certificate shall give the date of inspection; name of the grower or exporter, the district or locality and the country where grown; a statement that the stock has been inspected by a duly authorized official and found, or believed to be, free from insect pests and plant diseases. The origi-nal certificate shall be signed and sealed by, and the copy certificate shall bear the seal of, the responsible inspection official for the country of origin.

#### United States Customs Free List

The following commodities are admitted into the United States free of customs duties:

(n. s. p. f.—Not specially provided for.)

Acids: Acetic, arsenic, arsenious, carbolic, chromic, creosote or dead oil, cresylic, fluoric, hydrochloric, hydrofluoric, muriatic, nitric, phenyl, phosphoric, phthalic, prussic, pyeoligneous, sludge, stearin, oleo,

sulphuric, valerianic.

Aconite, agates (unmanufactured), argricultural implements, albumen, n. s. p. f.; alcohol (methyl or wood, absolute for colleges), ammonia (nitrate and sulphate of), animals (brought into U. S. temporarily or for breeding purposes, animals (wild; only when imported for exhibition in zoological collections, for or profit), anthracite coal, antitoxins, aromatic (not garden) seeds, arrowroot (not manufactured), art (works of) articles returned after having been exported without having been advanced in value or improved in

without having been advanced in value or improved in condition, asbestos (unmanufactured) asphaltum.

Bacon, bagging (for cotton, etc.), barbed fence wire, barks, n. s. p. f.; beans (locust, medicinal, crude, Tonka crystals), beef (fresh), beeswax, belting leather, benzine, berries, n. s. p. f.; bibles, birds, bismuth, bituminous coal, boneblack, books (for the blind and for religious, philosophical, scientific or literary purposes, persons or families from foreign countries, professional), boots, borax (crude), brass (old, clippings, akimmings, fit only for remanufacture), brimstone, briquets, broom corn, buckwheat, bullion (gold or silver), burlaps.

ver), burlaps.

Cabinet woods (in the log), calcium, n. s. p. f.; camel's hair, carbolic acid, cash registers, cattle, cement (Roman, Portland, hydraulic, and others). (crude), charts (hydraulic, for use in the United States printed over 20 years), citizens of United States dying in foreign countries (personal effects of), clapboards, coal, cobalt, cocoa, n. s. p. f.; cocoanuts (in the shell), cocoons, silk; cod liver oil, coffee, coins (gold, silver and copper), composition metal, n. s. p. f.; copper (in plates, bars, ingots or pigs, n. s. p. f. and ore), copperas, cork (unmanufactured), corn-meal, cotton and cotton bagging, cotton waste, cottonseed oil, cream, croton oil, curry, cyanide of potassium and soda, darning needles, drawings, drugs (not advanced), dyeing and tanning materials, dyewoods, n. s. p. f.; engravings, n. s. p. f.; etchings, n. s. p. f.; evergreen seedlings, explosive substances for mining, blasting and artillery

purposes, extracts, n. s. p. f.

Fans (common palm leaf), fats, fencing (barbed and galvanized wire), ferro manganese, fibres and grasses, films (moving picture sensitized but not exposed or developed, light struck or damaged or worn out, pro-vided basic films are of American manufacture), fire-

wood, flat rails (iron or steel), flax, flint, flints and flint stones unground; flocks (cotton or wool), flower and grass seeds, n. s. p. f.; foreign stamps, fossils, fowls (land and water n. s. p. f.), fruit plants (for purpose of propagation or cultivation), fruits or berries, n. s. p. f.; fulminates, furniture of persons or families from foreign countries, furs (undressed), galvanized wire, gasoline, glass (plate or disks for optical instruments)

Glaziers' diamonds, gloves (leather, n. s. p. f.), glue (stock), gold (bullion, medals, ore and sweepings), gold (silver, copper or other metal coins), granite, n. s. p. f.; grass seed and sisal, grasses and fibers, guano (manures and all substances used only in manure), gunny bags (old and cloth), gunpowder, gutta percha

(crude).

Hair (unmanufactured), n. s. p. f.; hams, handle bolts, hand sewing needles, harness (saddles and saddlery or parts thereof), harvesters, hemlock bark (extract of), hemp, n. s. p. f.; herbs (used as drugs, n. s. p. f.); sides, hones and whetstones, hoop iron or steel (coated or not coated with paint), hoops (iron or steel, cut to lengths), horns and parts of, horsehair, horseshoe nails, horseshoes, household effects.

Ice, india rubber (crude), indigo, ingots, insects' eggs, instruments (philosophical and scientifical), inventions (models of), iodine (crude and resublimed), ipecac, iron ore, iron or steel bands (cut to lengths and manufactures of), iron or steel billets, iron or steel nails

(rails and scrap).

Junk (old), jute, kerosene, kindling wood. Lamb, lambskin (not dressed), land fowls, lard, laths, leather (boots and shoes, harness, rough, saddles and saddlery, shoe laces, sole, uppers, vamps), leaves used as drugs, n. s. p. f.; lemon and lime juice, lemon peel (not preserved), libraries (which have been used abroad by persons from foreign countries not less than one rear, and not intended for other persons nor for sale). lifeboats and life-saving apparatus (apparatus specially imported by societies and institutions incorporated, or established to encourage the saving of human life), linotype machine, lithographic stones not engraved,

loadstones, lobsters, logs, loops, lubricating oil n. s. p. f.; lumber (planed or finished, n. s. p. f.).

Machines (for spreading tar and oil and for sugar making, linotype, sewing, thrashing, typesetting), magnesite (crude or calcined), maize, manganese (oxide and nesite (crude or calcined), maize, manganese (oxide and ore of), manila, manures, manuscripts, maps, n. s. p. f.; marroons, marrow, marshmallow, meal (corn), meats, medals of gold, silver or copper; metal composition, n. s. p. f.; milk (preserved or condensed, etc.), mineral salts, minerals (crude), models of inventions, moss, n. s. p. f.; mowers, music for the blind, mutton, nails, naphtha, needles (hand sewing and darning), newspapers and periodicals issued within 6 months of the time of entry nickel ore nitrate of potash or saltthe time of entry, nickel ore, nitrate of potash or saltpetre (crude and soda), nut oil, nux vomica.

Oakum, oil cake, oils not provided for in list under Schedule A; orange juice, peel, not preserved, candied or dried; ore (cobalt, copper, emery, gold, iron, manganese, manganiferous iron, nickel, silver, tin, tungsten-

bearing).

Paper (printing, n. s. p. f., stock, crude), paraffin and paraffin oil, parchment, paris green, pearl (mother of, and pearl shells), pebbles, Brazilian, periodicals and newspapers issued within 6 months of time of entry, personal effects, phosphates (crude), phosphorus, pigs (copper, iron), pipe (cast iron), fruits (tropical and semi-tropical, for propagation or cultivation), plates (copper, glass), platinum (unmanufactured), plows, plumbago pork, potash (carbonate crude, cyanide, sulplumbago, pork, potash (carbonate, crude, cyanide, sulphate), potassium (cyanide of), potatoes, printing paper, prizes, prussic acid, publications issued by scientific and literary associations or academies, pulp woods.

Quinine.

Radium, rags, rails (flat, iron or steel) railway bars (iron or steel), rapeseed, rattan (unmanufactured), reapers, reeds (unmanufactured), regalia and gems (statuary and casts of sculpture), revenue stamps (foreign), roots,

Saddlery, safety lamps (miner's), sago, salt, saltpetre (crude), scientific apparatus, seeds (all flower and grass, n. s. p. f.), sewing machines, sheep, shellfish, shells, shingles, shoddy, shoes (leather), silk, raw; silver bullion (coins, medals, ore, sweepings), sisal grass, skins (undressed), soda (arsenate, ash, cyanide, nitrate, silicate, sulphate), sole leather, specimens (botany and minerology and natural history), spermaceti oil, spikes, spirits (turpentine), sprigs (cut), stamps (foreign), statuary, staves, steel, scrap; stone, strychnine, sugarbeet seed, sulphate of ammonia (copper, iron, potash, soda) sulphur, sulpluric acid, sumac (ground), swine.

T-rails (iron or steel), tacks, cut; talcum, n. s. p. f.; tallow, tanning material, tapioca, tar and pitch wood, tea, thrashing machines, timber, tin (in ore, bars, blocks, pigs, grain or ganulated), tobacco stems, trophies (bestowed as such an accepted or honorary distinction), turpentine, twine, type, old; typesetting machines, type-

writers.

writers.

Vaccine virus, veal, vegetable substances, vellum, verdigris, vitrol (blue), wagons and carts, waste, water fowls, wax n. s. p. f.; weeds and wood used as drugs, n. s. p. f.; whalebone (unmanufactured), whale oil (product of American fisheries; wheat, whetstones, wild animals (wild animals for exhibition in zoological collections for scientific and educational purposes, and not for sale or profit), wire (barbed fence, galvanized nails, staples), wood, n. s. p. f.; wood (carbonized, extract flocks, garnetted waste, mungo, nails, rags, ring tract. flocks, garnetted waste, mungo, nails, rags, ring waste, roving waste, scoured, shoddy, slubbing waste, thread waste, wastes, all other yarn waste); works of art, wrought scrap iron and steel, wrought iron or steel nails, n. s. p. f.; yarn (Angora goat hair, alpaca hair, etc., waste).

### Terms Used by Importers, **Exporters and Customs**

T. D.-Treasury decision.

n. e. s.-Not elsewhere provided.

n. s. p. f.—Not elsewhere provided,
n. s. p. f.—Not specially provided for.
n. o. p.—Not otherwise provided,
c. v.—Chief value.
R. S.—Revised Statutes of U. S.
u. p.—Under proof.

mt.-Empty.

f. p. a.—Free of particular average (see "Marine Insurance.")

b. m.-Board measure,

f. o. b.—Free on board; without charge for delivery on cars.

c. i. f.-Cost, insurance, freight, charges included in bills.

f. a. s.—Free alongside (ship).

Call loan: A loan payable on demand.
Consignee: Party to whom goods have been sent.
Consignment: Goods sent by one party to another.
Demurrage: A charge for delay in loading or discharging steamers or cars.

Ex-ship: A term meaning free of all charges up to and including the discharging of merchandise from

Foreign Exchange: The transfer of credits between places not in the same country.

Free overside: Without charges up to and including

the discharging of a vessel.

With exchange: These words mean on a draft that

the cost of collection is to be added to the amount of the draft and paid by the party on whom it is drawn.

Letter of credit: A letter stating that the person named therein has a certain amount of money to his credit, which he can draw from correspondents of the issuer. The letter is signed by the holder in the presence of the issuer, and also each time it is presented to a correspondent.

Invoice: An invoice is an itemized statement of the quantities, prices and amounts of articles sold by one person to another, with the date of sale, terms, and dis-

count allowed if any, etc.

Foreign invoice: When sending goods out of the country, the shipper must certify that the bill sent with them is true and correct.

Bill of Lading (B L): A written acknowledgement by a carrier, as a railroad or steamship company, of the receipt for transportation.

Bill of Exchange: An unconditional written order from one person (the drawer) to another (the drawee) to pay to a third person (the payee) a certain sum of money. A bill of exchange is often called a draft, and this term is used for a bill payable or collectable through

#### Duties

Duties, or customs, are taxes levied by governments on imported goods, for producing revenue and for protecting home industries.

There are two kinds of duties, viz.: Ad valorem and

Specific duty is levied on imported goods according to the weight, measurement, or number of the articles, irrespective of their value; thus, oats, 10 cents a bushel; coal, 75 cents a ton. The long ton of 2,240 pounds and the hundredweight of 112 pounds are used in computing specific duties.

Ad valorem duty is a percentage of the market value of the goods in the country from which they are imported, as machinery, 20 per cent; cotton goods, 10 per cent, etc. The market value of the goods is the invoice value after deducting discounts and before extra charges, such as commission, freight, boxing, etc., are added

Before computing duties allowances are made for the following: Tare, a deduction for the weight of containers: leakage, an allowance for loss of liquids imported in barrels or casks and breakage and allowance for the loss of liquids imported in bottles. The net quantity is what remains after deducting tare, leakage or breakage.



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## Marine Insurance

By Frank G. Taylor, General Agent Fireman's Fund Insurance Co., Seattle, U.S.A.

This article is written in the hope that it may prove of assistance to merchants and shippers of goods by water and in a measure at least lead to a better understanding of Marine Insurance.

Unless specially mentioned in the policy or certificate, goods are not insured until they are on board the vessel which is to carry them forward.

The usual marine insurance policy on goods reads:

"Beginning the adventure from and immediately following the loading of the goods on board the good Steamer"

Merchants and Shippers who are accustomed to deliver their goods at wharves several days prior to sailing of steamers should understand that goods so delivered are at their own risk and should make specific arrangements to insure such goods against the risk of fire on wharf for the period between the time of delivery on wharf until safely on board steamer. It is customary on the Pacific Coast to insure goods for invoice cost plus charges and a certain percentage, usually ten per cent, and if the steamer freight is prepaid the amount of such prepaid freight should always be added to the value of goods when making declaration to underwriters.

Freight charges once prepaid will not be returned by the steamship company whether the goods are lost or not. Under the terms of most bills of lading full freight (that is, the full amount of freight on the entire shipment) is payable on the delivery of the goods at destination. Careful reading of the bills of lading will also show that full freight is payable on goods arriving on destination in a damaged condition as well as on sound goods. Some shippers invariably include the amount of the freight charges in declaring their shipments to underwriters, whether the freight is actually prepaid to the steamship company or payable at destination, and this would seem to be the wise course to pursue, for, while the freight may not be due until the goods have been delivered at destination, it must be borne in mind that the full freight on the entire shipment is due at that time on the damaged as well as on the sound, and it will readily be seen that a shipper called upon to pay the full freight on goods arriving at destination in a damaged condition might suffer considerable loss.

The bills of lading of some steamship companies contain the following clause:

"Freight is to be considered earned at time of receipt of shipment and is to be paid whether vessel or goods are lost or not lost at any stage of the entire transit."

This provision in the bill of lading has been held to be valid by the courts. In accepting a bill of lading containing this provision the shipper guarantees to pay the freight charges whether the vessel or goods are lost or not and consequently should add the amount of the freight to the value of the goods when making declaration to underwriters.

F. P. A.: This is an expression in common use between marine underwriters and shippers and is an abbreviation of the words "Free of particular average." For all practical purposes the term "Free of particular average" may be said to mean "free of partial loss caused by sea perils." Goods consigned to ports on the Coast of Alaska are frequently insured under the following clause:

"Warranted free of particular average unless the ship or craft be stranded, sunk, burned, or caused by collision with another ship or vessel."

In explanation of this clause we find that, under its conditions, the owner of the goods agrees that he

will not make any demand on underwriters for any partial damage to his goods except in general average. unless at some time during the voyage the vessel carrying the goods shall have stranded, sunk, or burned. One of these contingencies must arise or the damage must have been caused by collision with another vessel before the owner of the goods can have a just claim against his underwriters. It does not appear necessary that damage to the goods be caused directly by the vessel having stranded, sunk, or burned; it is sufficient if the owner of the goods can show,first, that one of these contingencies did arise, and second, that the damage was due to a sea peril. To illustrate, a vessel might spring a leak and considerable cargo be partially damaged by salt water. Such damage, while it would undoubtedly be a partial loss caused by a sea peril, would not constitute a claim on under-writers under the above clause for the reason that the vessel did not strand, sink, burn, nor was the damage caused by collision with another ship. But supposing that later on the vessel stranded or was on fire, the fact that the vessel stranded or was on fire would at once, to use a marine expression, "open the warranty" in the policy, and the owner of the goods would be entitled to collect from his underwriters for the damage, caused by the vessel leaking. These conditions have proven especially attractive to shippers of goods to Alaska where the principal losses seem to be due to steamers stranding, which, as I said before, "opens the warranty" in the policy and permits of the payment of losses by underwriters.

With the exception of shipments to Alaska ports, goods are frequently insured against partial loss caused by sea perils if amounting to a certain percentage of their value, say, five or ten per cent. This is commonly known as insurance "with average", oftentimes abbreviated "W. A.," and the clause in the policy would read:

"Warranted free of particular average under say 5 per cent."

Or to make it a little clearer:

"Warranted by the assured that no claim will be made on underwriters for partial loss caused by sea perils unless the damage amounts to 5 per cent or more of the value of the shipment."

Under this clause it is not necessary that the vessel be stranded, sunk, burned, or that the damage be caused by collision with another vessel, in order to constitute a claim against underwriters. The policy would pay for any damage caused by sea peril, provided the damage amounted to 5 per cent or more of the value stated in the policy.

Underwriters are entitled to prompt and full advices of all shipments to be insured. Declarations should be made to underwriters prior to the loading of goods on vessel and should contain the name of vessel on which goods are to be shipped, character of goods, showing number of cases or packages, marks, name of consignee, destination and amount to be insured. Goods carried on deck are separately insured. The rate of insurance charged on goods carried on deck is usually double that charged where goods are carried in the hold or under deck, and it is therefore important that declarations to underwriters show plainly the character and value of goods which may be shipped on deck as well as under deck. Marine insurance rates are almost invariably based on the goods being carried under deck, and in the absence of advices to the contrary are so insured, except in certain trades, such as lumber, where deckloads are customary. Care should be taken by shippers to ascertain from the different steamship companies whether their goods are to be

loaded under or on deck and declaration made accordingly to their underwriters.

The most satisfactory way for the merchant or shipper to procure such marine insurance as he may require would seem to be to enter into a yearly contract with some reputable marine insurance company, under the terms of which the insurance company agrees to accept insurance on all shipments made by the merchant and the merchant agrees to declare every shipment made by him with all necessary particulars to the underwriter. It is frequently impossible for merthants to declare their shipments to underwriters prior to the sailing of steamers. This is especially true where goods are purchased at some distant point and the merchant has no advices as to the name of the steamer on which his goods are to be shipped until considerable time after the vessel has sailed. shipments can be fully protected under a yearly contract as above mentioned and declarations made to underwriters as soon as the invoice and bill of lading are received by the merchant.

General Average: There are comparatively few shippers of goods by sea who have not at some time been called upon to put up a cash deposit and sign what is commonly known as an "average bond" before their goods will be released to them by the steamship company. As commerce on the Pacific increases this apparently annoying feature of business is becoming more generally understood, but there are possibly some shippers to whom the matter is not at all clear and it is hoped that the following few remarks on this subject may assist in giving these shippers a better understanding of this charge.

An assessment in general average is not, as some are inclined to believe, an arbitrary charge made for the benefit of shipowners and underwriters. There can be no just charge or assessment made on goods in general average unless the goods have in some way benefited by the act or expense incurred which made an assessment necessary. The jettison of cargo at sea appears to be one of the best illustrations of a general average act.

Let us say that a vessel springs a leak during the voyage and in order to prevent her sinking and resulting in the loss, not only of the vessel itself and her entire cargo, but of the freight money then being earned on the voyage, the master voluntarily decided to open the hatches and throw overboard a portion of the cargo, and by this act the vessel is sufficiently lightened so that her pumps are able to keep her free and eventually the vessel reaches port. If your shipment happened to be the last to be loaded on to the vessel it would ordinarily be the first to come out of the vessel at destination. It would be manifestly unfair to jettison your shipment, which act was the means of lightening the vessel and saving, not only the ship but the remainder of her cargo as well as the freight money being earned, and that you alone should stand this lcss. The jettisoning of your shipment was the means of saving the entire venture and all parties to the venture should rightly be made to contribute to your loss, and you also should contribute on the amount which the general average makes good to you. If your shipment is fully insured your underwriters will pay the amount assessed against your goods; but whether your goods are insured or not the general average will make good to you the value of the goods which were jettisoned less the assessment which you are called upon to pay. It is safe to figure that all policies of insurance on goods cover and protect the merchant against assessments in general average.

The above is only one illustration of general average and it is the most easily understood.

It is not difficult therefore to see that a merchant can suffer considerable loss by reason of assessments levied against his goods in general average where the goods themselves arrive at destination in a perfectly sound condition, but as above stated, such losses can be fully protected by insurance.

#### The Harter Act

Section 1. It shall not be lawful for the manager, agent, master or owner of any vessel transporting merchandise or property from or between ports of the United States and foreign ports to insert in any bill of lading or shipping document any clause, covenant, or agreement whereby it, he, or they shall be relieved from liability for loss or damage arising from negligence, fault, or failure in proper loading, stowage, custody, care, or proper delivery of any and all lawful merchandise or property committed to its or their charge. Any and all words or clauses of such import inserted in bills of lading or shipping receipts shall be null and void and of no effect.

Section 2. It shall not be lawful for any vessel transporting merchandise or property from or between ports of the United States of America and foreign ports, her owner, master, agent or manager to insert in any bill of lading or shipping document any covenant or agreement whereby the obligations of the owner or owners of said vessels to exercise due diligence, properly equip, man, provision, and outfit said vessel, and to make said vessel seaworthy and capable of performing her intended voyage, or whereby the obligations of the master, officers, agents, or servants to carefully handle and stow her cargo and to care for and properly deliver same, shall in any wise be lessened, weakened, or avoided.

Section 3. If the owner of any vessel transporting merchandise or property to or from any port in the United States of America shall exercise due diligence to make the said vessel in all respects seaworthy and properly manned, equipped, and supplied, neither the vessel, or owners, agents, or charterers shall become or be held responsible for damage or loss resulting from faults or errors in navigation or in the management of said vessel, nor shall the vessel, her owner or owners, charterers, agent, or master, be held liable for losses arising from dangers of the sea or other navigable waters, acts of God, or public enemies, or the inherent defect, quality, or vice of the thing carried, or from insufficiency of package, or seizure under legal process, or for loss resulting from any act or omission of the shipper or owner of the goods, his agent or representative, or from saving or attempting to save life or property at sea, or from any deviation in rendering such service.

Section 4. It shall be the duty of the owner or owners, master or agent of any vessel transporting merchandise or property from or between ports of the United States and foreign ports to issue to shippers of any lawful merchandise a bill of lading, or shipping document, stating, among other things, the marks necessary for identification, number of packages, or quantity, stating whether it be carrier's or shipper's weight, and apparent order or condition of such merchandise or property delivered to and received by the owner, master, or agent of the vessel for transportation, and such document shall be prima facie evidence of the receipt of the merchandise therein described.

## Allen-Stoltze Lumber Co.

Limited

Exporters VANCOUVER, B. C.

B. C. Forest Products Douglas Fir, Sitka Spruce Red Cedar Shingles

## York-Antwerp Rules of 1890

#### Rule I.—Jettison of Deck Cargo

No jettison of deck cargo shall be made good as general average.

Every structure not built in with the frame of the vessel shall be considered to be a part of the deck of a vessel.

## Rule II.—Damage by Jettison and Sacrifice for the Common Safety

Damage done to a ship and cargo, or either of them, by or in consequence of a sacrifice made for the common safety, and by water which goes down a ship's hatches opened or other opening made for the purpose of making a jettison for the common safety, shall be made good as general average.

#### Rule III.—Extinguishing Fire on Shipboard

Damage done to a ship and cargo, or either of them, by water or otherwise, including damage by beaching or scuttling a burning ship, in extinguishing a fire on board the ship, shall be made good as general average, except that no compensation shall be made for damage to such portions of the ship and bulk cargo or to such separate packages of cargo, as have been on fire.

#### Rule IV.—Cutting Away Wreck

Loss or damage caused by cutting away the wreck or remains of spars or of other things which have previously been carried away by sea peril, shall not be made good as general average.

#### Rule V.-Voluntary Stranding

When a ship is intentionally run on shore, and the circumstances are such that if that course were not adopted she would inevitably sink, or drive on shore or on rocks, no loss or damage caused to the ship, cargo and freight, or any of them, by such intentional running on shore shall be made good as general average. But in all other cases where a ship is intentionally run on shore for the common safety, the consequent loss or damage shall be allowed as general average.

## Rule VI.—Carrying Press of Sail—Damage to or Loss of Sails

Damage to or loss of sails and spars, or either of them, caused by forcing a ship off the ground, for the common safety, shall be made good as general average; but where a ship is afloat, no loss or damage caused to the ship, cargo, and freight, or any of them, by carrying a press of sail, shall be made good as general average.

#### Rule VII.-Damage to Engines in Refloating a Ship

Damage caused to machinery and boilers of a ship, which is ashore and in a position of peril, in endeavoring to refloat, shall be allowed in general average, when shown to have arisen from an actual intention to float the ship for the common safety at the risk of such damage.

### Rule VIII.—Expenses of Lightening a Ship When Ashore, and Consequent Damage

When a ship is ashore, and, in order to float her, cargo, bunker coals, and ship's stores, or any of them are discharged, the extra cost of lightening, lighter hire, and reshipping (if incurred), and the loss or damage sustained thereby, shall be admitted as general average.

### Rule IX.—Cargo, Ship's Materials, and Stores Burnt for Fuel

Cargo, ship's materials, and stores, or any of them, necessarily burnt for fuel for the common safety at a

time of peril, shall be admitted as general average, when and only when an ample supply of fuel had been provided; but the estimated quantity of coal that would have been consumed, calculated at the price current at the ship's last port of departure at the date of her leaving, shall be charged to the shipowner and credited to the general average.

#### Rule X.—Expenses at Port of Refuge, Etc.

(a) When a ship shall have entered a port or place of refuge, or shall have returned to her port or place of loading, in consequence of accident, sacrifice, or other extraordinary circumstances, which render that necessary for the common safety, the expenses of entering such port or place shall be admitted as general average; and when she shall have sailed thence with her original cargo, or a part of it, the corresponding expenses of leaving such port or place, consequent upon such entry or return, shall likewise be admitted as general expense.

general expense.

(b) The cost of discharging cargo from a ship, whether at a port or place of loading, call, or refuge, shall be admitted as general average, when the discharge was necessary for the common safety or to enable damage to the ship, caused by sacrifice or accident during the voyage, to be repaired, if the repairs were necessary for the safe prosecution of the voyage.

necessary for the safe prosecution of the voyage.

(c) Whenever the cost of discharging cargo from a ship is admissible as general average, the cost of reloading and storing such cargo on board the said ship, together with all storage charges on such cargo, shall likewise be so admitted. But when the ship is condemned or does not proceed on her original voyage, no storage expenses incurred after the date of the ship's condemnation or of the abandonment of the voyage shall be admitted as general average.

(d) If a ship under average be in a port or place at which it is practicable to repair her, so as to enable her to carry on the whole cargo, and if, in order to save expenses, either she is towed thence to some other port or place of repair or to her destination, or the cargo or a portion of it is transhipped by another ship, or otherwise forwarded, then the extra cost of such towage, transhipment and forwarding, or any of them (up to the amount of extra expense saved) shall be payable by the several parties to the adventure in proportion to the extraordinary expense saved.

## Rule XI.—Wages and Maintenance of Crew in Port of Refuge, Etc.

When a ship shall have entered or been detained in any port or place under circumstances, or for the purpose of the repairs mentioned in Rule X, the wages payable to the master, officers, and crew, together with the cost of maintenance of the same, during the extra period of detention in such port or place until the ship shall or should have been made ready to proceed on her voyage, shall be admitted as general average. But when the ship is condemned, or does not proceed on her original voyage, the wages and maintenance of the master, officers, and crew, incurred after the date of the ship's condemnation or of the abandonment of the voyage, shall not be admitted as general average.

#### Rule XII.—Damage to Cargo in Discharging, Etc.

Damage done to or loss of cargo necessarily caused in the act of discharging, storing, reloading, and stowing, shall be made good as general average, and only when the cost of those measures respectively is admitted as general average.

#### Rule XIII.—Deductions From Cost of Repairs

In adjusting claims for general average, repairs to be allowed in general average shall be subject to the following deductions in respect of "new for old," viz.:

In the case of iron or steel ships, from date of original register to the date of accident:

#### Up to 1 Year Old (A)

All repairs to be allowed in full, except painting or coating of bottom, from which one-third is to be deducted.

#### Between 1 and 3 Years (B)

One-third to be deducted off repairs to and renewal of woodwork of hull, masts and spars, furniture, upholstery, crockery, metal and glassware, also sails, rigging, ropes, sheets and hawsers (other than wire and chain), awnings, covers, and painting.

One-sixth to be deducted off wire rigging, wire ropes and wire hawsers, chain cables and chains, donkey engines, steam winches and connections, steam cranes and connections; other repairs in full.

#### Between 3 and 6 Years (C)

Deductions as above under Clause B, except that one-sixth be deducted off ironwork of masts and spars, and machinery (inclusive of boilers and their mountings).

Between 6 and 10 Years (D)

Deduction as above under Clause C, except that onethird be deducted off ironwork, masts and spars, repairs to and renewal of all machinery (inclusive of boilers and their mountings), and all hawsers, ropes. sheets and rigging.

#### Between 10 and 15 Years (E)

One-third to be deducted off all repairs and renewals. except ironwork of hull and cementing and chain cables, from which one-sixth to be deducted. Anchors to be allowed in full.

#### Over 15 Years (F)

One-third to be deducted off all repairs and renewals. Anchors to be allowed in full. One-sixth to be deducted off chain cables.

#### Generally (G)

The deductions (except as to provisions and stores, machinery and boilers to be regulated by the age of the ship, and not the age of the particular part of her to which they apply. No painting bottom to be allowed if the bottom has not been painted within six months previous to the date of accident. No deduction to be made in respect of old material which is repaired with-out being replaced by new, and provisions and stores which have not been in use.

In the case of wooden or composite ships-

When a ship is under one year old from date of original register, at the time of accident, no deduction new for old shall be made.

After that period a deduction of one-third shall be made, with the following exceptions:

Anchors shall be allowed in full. Chain cables shall be subject to a deduction of one-sixth only.

No deduction shall be made in respect of provisions and stores which have not been in use.

Metal sheathing shall be dealt with by allowing in full the cost of a weight equal to the gross weight of metal sheating stripped off, minus the proceeds of the old metal. Nails, felt, and labor metaling are subject to a deduction of one-third.

In the case of ships generally-

In the case of all ships, the expense of straightening bent iron-work, including labor of taking out and replacing it, shall be allowed in full.

Graving dock dues, including expenses of removals, cartages, use of shears, stages, and graving dock materials, shall be allowed in full.

#### Rule XIV.—Temporary Repairs

No deduction "new for old" shall be made from the cost of temporary repairs of damage allowable as general average.

#### Rule XV.-Loss of Freight

Loss of freight arising from damage to or loss of cargo shall be made good as general average either when caused by a general average act or when the damage to or loss of cargo is so made good.

#### Rule XVI.—Amount to be Made Good for Cargo Lost or Damaged by Sacrifice

The amount to be made good as general average for damage or loss of goods sacrificed shall be the loss which the owner of the goods has sustained thereby, based on the market values at the date of the arrival of the vessel or at the termination of the adventure.

#### Rule XVII.—Contributory Values

The contribution to a general average shall be made upon the actual values of the property at the termina-tion of the adventure, to which shall be added the amount made good as general average for property sacrificed; deductions being made from the shipowner's freight and passage money at risk of such port charges and crew's wages as would not have been incurred had the ship and cargo been totally lost at the date of the general average act or sacrifice, and have not been allowed as general average; deduction being also made from the value of the property of all charges incurred in respect thereof subsequently to the general average act, except such charges as are allowed in general average.

Passenger's luggage and personal effects not shipped under bill of lading shall not contribute to general

average.

#### Rule XVIII.—Adjustment

Except as provided in the foregoing rules, the adjustment shall be drawn up in accordance with the law and practice that would have governed the adjustment had the contract of affreightment not contained a clause to pay general average according to these rules.

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## Tolsma Belting Company

Manufacturers of Leather **Belting** 

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Mechanical Rubber Goods

Seattle, Wash. Tacoma, Wash. Everett, Wash.

## Treaty Ports and Ports of Call

### Places Open to Foreign Trade in Far East

(Note.—E. O. signifies "effectively opened.")

#### I.-China

(a) Treaty ports and places opened by China to foreign trade:

Aigun (Sino-Japanese Treaty, 1905; actually opened, June 28, 1907).

Amoy (Nanking) 1842.

Antung (United States Treaty, 1903; actually opened May 1, 1906).

Canton (Nanking) 1842.

Changchun (Japanese Treaty, 1905; E. O. January 14,

Changsha (Japanese Treaty of October 8, 1903; E. O. July 1, 1904

Chefoo (Yentai or Tangchow) (Tientsin, 1858; E. O. 1861)

Chinan (Imperial Decree, 1904; E. O. January 20, 1906).

Ching-wang-tao (Imperial Decree, 1898). Chinkiang (Tientsin, 1858; E. O. 1861). Choutsun (Imperial Decree, 1904; E. O. January 20, 1906).

Chunking (Additional Article, Peking, 1890; Shimonoseki, 1895)

Dairen (Dalny) (by Japan, E. O. September 1, 1906). Fakumen (Japanese Treaty, 1905; E. O. September 10, 1916).

Feng Huang Chen (Sino-Japanese Treaty, 1905; actually opened June 28, 1907).

Foochow (Nanking, 1842). Hailar (Sino-Japanese Treaty, 1905; actually opened, June 28, 1907).

Hangchow (Shimonoseki, 1895). Hankow (Tientsin, 1858; E. O. 1861). Harbin (Japanese Treaty, 1905; E. O. January 14, 1907). Hun Chun (Sino-Japanese Treaty, 1905; actually opened June 28, 1907)

Ichang (Chefoo, 1876, E. O. 1877). Kiao-chau (leased to Germany, 1898). Kirin (Japanese Treaty, 1905; E. O. January 14, 1907). Kiukiang (Tientsin, 1858; E. O. 1861).

Kiangchow (or Hoihow-in-Hainan) (Tientsin, 1858). Kong Kun; Market (Special Article, 1897, modifying Burma Convention, 1894).

Kongmoon (Shanghai Treaty, 1902). Kowloon, port of entry for Canton. Kuang-chouwan (leased to France).

Lappa, port of entry for Canton.
Liao Yang (Sino-Japanese Treaty, 1905; actually opened
June 28, 1907).

Lungchow (French Treaty, 1886).
Mandchourie (Manchuli) (Japanese Treaty, 1905; E. O.
January 14, 1907).

Mengtze (French Treaty, 1886). Mukden (United States Treaty, 1903; actually opened, June 1, 1906).

Nanking (French Treaty, 1858; E. O. 1899).
Naning (note from Tsung-li Yamen to Sir C. MacDonald of February 4, 1897, supplementing Treaty of
1897 modifying Burma Convention of 1894; E. O. January 1, 1907).

Newchwang (or Yingkow) (Tientsin, 1858; E. O. 1861).

Ningpo (Nanking, 1842).

(Sino-Japanese Treaty, 1905; actually opened, Ninguta June 28, 1907)

Pakhoi (or Pei-hai) (Chefoo, 1876; E. O. 1877). Samshui (Special Article, 1897, modifying Burma Convention, 1894).

Sanhsing (Sino-Japanese Treaty, 1905; actually opened, June 28, 1907).

Santuao (or Funing) (Imperial Decree, 1898). Shanghai (Nanking, 1842). Shaasi (Shimonoseki, 1895).

Sinminting (Japanese Treaty, 1905; E. O. October 10, 1906).

Soochow (Shimonoseki, 1895). Swatow (or Chac-Chow) (Tientsin, 1858; E. O. 1860). Szemao (French Additional Convention, 1895). Ta-tung-kou (Japanese Treaty, 1903). Tengyueh (Monein) (Agreement of 1897, modifying Burma Convention, 1894).

Tiehlingh (Japanese Treaty, 1905; E. O. September 10, 1906).

Tientsin (Peking, 1860)

Tsi-tsi-har (Japanese Treaty, 1905; E. O. January 14, 1907).

Tungchiangtzu (Japanese Treaty, 1905; E. O. September 10. 1906).

Weihaiwei (leased to Great Britain).

Wei-hsien (Imperial Decree, 1904; E. O. January 20, 1906).

Wenchow (Chefoo, 1876; E. O. 1877)

Wuchow (Special Article, 1897; modifying Burmah Convention, 1894).

Wuhu (Chefoo, 1876; E. O. 1877). Wusung (Imperial Decree, 1898). Yochow (Imperial Decree, 1898).

#### Ports of Call

(1) On the Yangszte, for passengers and cargo: Hokou (Chefoo Convention, 1876). Luchikou (Chefoo Convention, 1876). Nganking (Anking) (Chefoo Convention, 1876). Tatung (Chefoo Convention, 1876). Wu-Sueh (Chefoo Convention, 1876). (2) On the Yangszte, for passengers. Hwangchow (Yangszte Regulations, 1898). Hwang-tze-kang (Yangszte Regulations, 1898).

Ichang b (Yangszte Regulations, 1898) Kiang-yin (Yangszte Regulations, 1898).

(3) On the West River, for passengers and cargo: Komchuk (Burma Convention, 1897)

Lo-ting hau (by Shanghai Treaty, 1902). d Pak-tau-hau (by Shanghai Treaty, 1902). d Shiu-hing (Burma Convention, 1897). Takhing (Burma Convention, 1897).

(4) On the West River for passengers: Fung-chuen (Shanghai Treaty, 1902). d

How-lik (Shanghai Treaty, 1902). c d Kau kong (Shanghai Treaty, 1902). c d. Kulow (Shanghai Treaty, 1902). d

Luk Pu (Shanghai Treaty, 1902). c d Luk To (Shanghai Treaty, 1902). c d.

Mah-ning (Shanghai Treaty, 1902). c d Wing-on (Shanghai Treaty, 1902). d

Yuet Sing (Shanghai Treaty, 1902). c d

Yungki (Shanghai Treaty, 1902). c d

a-Chao-Chow is the port named in the Treaty.

b-Not to be confounded with Ichang, the Treaty port. c—Opened for passenger traffic in January, 1903, by the Viceroy of Canton, at the suggestion of His Majesty's Consul-General prior to ratification of Treaty.

d-Canton Consulate reported, June 20, 1914, by telegram that all had been declared open by Customs notification of March 1, 1904.

#### II.—Japan

(a) Treaty ports: Hakodate, opened in 1859. Nagasaki, opened in 1859.

Yokohama or Kanagawa, opened in 1867. Tokyo, opened in 1867. a

Hiogo, opened in 1868.
Osaka, opened in 1868. b
Niigata (or Ebisuminato), opened in 1869. b

(b) Ports in Formosa opened to subjects of Powers having Commercial Treaties with Japan for residence and

Anping, opened in 1896. Keelung, opened in 1896. Takao, opened in 1896.

Tamsui, opened in 1896.
Tainan (or Taiwan-foo), opened in 1896 to foreign

vessels and their cargo only.

(c) Opened with a proviso as to closing at three months'

notice:

Shimizu (Province of Suruga), opened in 1899. d Taketoyo (Province of Oware), opened in 1899. d Nagoya (Province of Owari), opened in 1907. d Yokkaichi (Province of Ise), opened in 1899. d Shimonoseki (Province of Ngato), opened in 1899. d Moji (Province of Buzen), opened in 1899. d Miyazu (Province of Tango), opened in 1899. d Tsuruga (Province of Echizen), opened in 1899. d Nanao (South Bay) (Province of Noto), opened in

1899. d Fushiki (Province of Etchu), opened in 1899, d Otaru (Province of Kushiro), opened in 1899, d Hakata (Province of Chikzen), opened in 1899, d Kushiro (Province of Kushiro), opened in 1899, d Karatsu (Province of Kizen), opened in 1899. d Karatsu (Province of Kizen), opened in 1899. d Muroran (Province of Iburi), opened in 1899. d Misumi (Province of Higo), opened in 1899. d Izuhara (Island of Tsuhima), opened in 1899. d Sasuna (Island of Tsuhsima), opened in 1899. d Hamada (Province of Iwami), opened in 1899. d Sakai (Province of Hoki), opened in 1899. d Itozaki (Province of Bingo), opened in 1900. Wakamatsu (Province of Chikuzen), opened in 1904. i Shishimi (Island of Tsushima), opened in 1899. d Naha (Loochoo Islands), opened in 1899. d Suminoye (Province of Hizen), opened in 1906. j Awomori (Province of Mutsu), opened in 1906. f g

a-Tokyo was never a shipping port, but simply a place open to foreign trade and residence.

b-These ports are under Article XI of the Treaty of 1894 excluded from the category of ports between which coasting trade is permitted to British vessels.

c-Opening notified by departmental notice issued by Foreign Office in Tokyo (February, 1896).

-Article III of Imperial Ordinance No. 342 (published in "Official Gazette" of the 13th July, 1899), by which the opening of these ports was notified, reads as follows:

"When the imports and exports together at any of the ports mentioned in Article I, for any two years in succession do not reach the value of 50,000 yen they shall be closed."

#### (1) Formosa:

Gosei (or Tokaku) m Taichu Prefecture, opened in 1899.

Koro (or Oulong), Taichu Prefecture, opened in 1899. Rokko (or Lukong), Taichu Prefecture, opened in 1899

Kiuko (or Kiukong), Taihiku Prefecture, opened in 1899.

Toko (or Tongkong), Tainan Prefecture, opened in 1899.

Tosekiko (or Toncho), Tainan Prefecture, opened in 1899.

(2) The Pescadores:

Maku (or Makung), opened in 1899.

#### III.—Chosen (Korea)

Treaty ports: Chemulpo (opened 1880 under Japanese Treaty, 1876).
Chinnampo (opened October 1, 1897).
Chungchin (opened April 1, 1908).
Fusan (Japanese Treaty, 1876).
Kunsan (May 1, 1899).

Munsan (May 1, 1899).
Masampo (May 1, 1899).
Mokpo (October 1, 1897).
Seoul (Hanyang), British Treaty, 1883.
Songchin (May, 1, 1899).
Wonsan (or Gensan) opened 1880 under Japanese Convention, 1879).

Ping-yang (held to be open by agreement among foreign representatives at Seoul, November, 1899).

Yang-wha-chin (opened 1883, under Japanese Conven-

tion, 1882).

Yongampo (date of opening not yet fixed).

Wiju (date of opening not yet fixed).

N. B.—Though the opening of the ports of Yongampo and Wiju has not yet been officially announced, the Customs opened offices at these ports in July, 1906, and foreign steamers call there without objection on the part of the authorities.

#### **Duty-Free Articles in China**

Articles exempted from import duty (articles included in Article VII. of Customs Tariff Law).

g-At the port of Awomori the following additional goods may be imported from the 1st December, 1907:

Tin plates iron tubes, solder.

h—At the port of Muroran all articles may be imported after the 1st December, 1917, with the exception of those prohibited by Article X. of the Customs Tariff Law.

i-At the port of Wakamatsu the following goods may be imported:

Fresh eggs

Rice, unhulled rice, barley, wheat, oats, Indian corn and beans.

Iron ore.

Pig iron. Manure.

And from the 1st December, 1907:

Coke, manganese ore, ferromanganese, and spiegl-

-At the port of Suminoye only the export of commodities is permitted.

k-Opening notified by Decree of Formosan Government, dated August, 1899.

1-The port of Kakoko (or Hokkokei) opened with the others in 1899, was closed from the 1st July, 1907, by decree of Formosan Government dated May, 1907.

m-The name in brackets in this case, as in the case of each of the ports of Formosa and of the port of the Pascadores, is the local Chinese name of the port in question.

d-Ports in Formosa and the Pescadores open, for the present, only to junk traffic:

(1) Formosa

"When in cases where, in consequence of development of communications, new ports are established in the vicinity of any of the ports enumerated in Article I., the further maintenance of any such port, as an open port, is considered unnecessary, it may be closed, notwithstanding the provisions of the preceding clause.

"The date of the closing shall be notified three months beforehand by the Minister of Finance.

e-Opened by Imperial Ordinance No. 330 (published in "Official Gazette" of the 28th October, 1907), under same conditions as ports under 4.

f-The following articles only may be imported at the ports of Muroran and Awomori.

Grains and seeds.

Beverages and comestibles (Articles in Group 3 of the Import Tariff attached to the Customs Tariff Law).

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Sugar, confectionery, and sweetmeats (articles included in Group 4 of the said Tariff). Fire

Hides and skins (articles included in Group 6, No. 66 of the above-mentioned Tariff).

Oils, fats, and waxes.

Tron:

T, angle, and the like. Rails and fishplates for rails.

Bolts, nuts, washers, rivets and dogspikes (all made of iron).

Materials for bridging and building (made of metal). Mechanics' tools, and agricultural implements and narts thereof

Locomotives, locomotive tenders, and parts thereof. Railway passenger cars, freight wagons, and parts

thereof.

#### ORDINARY PORT CHARGES

Customs Department, Treasury Department, Regulation 1908. Article 1682.

The following fees are not to be charged against the Government, but are to be collected from the private persons concerned, and returned on forms catalogue Nos. 1,000, 1,001, and 1,008.

For admeasurement of foreign vessel: Fees and description of same as above specified for American vessels.

For granting permit to a vessel not belonging to a citizen of the United States to go from district, and for receiving manifest.....\$2.00 Receiving manifest, and granting permit to unload for last mentioned vessel on arrival at one destination

from another ...... 2.00 Entry of vessel of 100 tons or more from a foreign Entry of vessel under 100 tons...... 1.50

Clearance of vessel of 100 tons or more for a foreign port ..... 2.50 Clearance of vessel under 100 tons (T. D. 16581)..... 1.50

Bond taken officially under laws relating to vessels not otherwise provided for, except when executed in connection with crew list, or with the entry, or passage, of goods through the customs, or with the entry of domestic merchandise for exportation (T. D. 12,080, 12,081, and 24,043).....

Official certificate under laws relating to vessels, including certificate of payment of tonnage tax on foreign vessels, except as above stated..... Collector's certificate to shipping articles (T. D.

16.581) ..... Certified copy of outward manifest if required. Fee abolished. (T. D. 16,581.)

Copy of marine document..... Official documents (U. S. vessels' documents excepted) required by any merchant, owner or master of any vessel, not before enumerated, including bill of health for foreign vessels (T. D. 5,643, 5,772, and

16,581) ..... Services other than admeasurement to be performed by the surveyor in foreign going vessels of 100 tons or more, having on board merchandise subject to duty R. S. 4186 (Not applicable to vessels without

cargo but with excess of sea stores)............ 3.00 For like services in vessels under 100 tons having similar merchandise..... 1.50

For like services on all foreign going vessels not having merchandise subject to duty..... Certified copy bill of sale, mortgage or other convey-

ance (R. S. 4195)..... No fee is collectable for certificate for cancellation bond in the Canadian Customs House (T. D. 17,804); copy of inspection certificate of steam vessels; copy of register, or enrollment sent to the Department of Commerce and Labor.

#### TONNAGE TAX

On all vessels of American or foreign registry entering ports of the United States from British Columbia, a tax of 2 cents per net ton will be collected. On all vessels from all other foreign countries, a tax of 6 cents per net registered ton will be collected. This is in addition to all entry or clearance charges, and applies at all ports of the United States. This tonnage tax is payable on the first five entries of each year. Vessels are exempt from further tonnage tax for the balance of the same year, after the five entries. This applies to all vessels between foreign ports and ports of the United States.

The law relative to the above is as follows:

Sec. 36. Statutes of 1910. That a tonnage duty of 2 cents per ton, not to exceed in aggregate 10 cents per ton in any one year is hereby imposed at each entry on all vessels which shall be entered at any port of the United States from any foreign port or place in North America, Central America, the West Indies, the Bahama Islands, the Bernard Library in the States of Central America hereby in the States of the muda Islands, or the coast of South America bordering in the Caribean Sea or Newfoundland, and a duty of 6 cents per ton, not to exceed 50 cents per ton per annum, is hereby imposed at each entry on all vessels which shall be entered in any port in the United States from any other foreign port, not, however, to include vessels in distress or not engaged in trade.

Sec. 37. There shall be levied and collected annually on the first day of September by the Collector of Customs of the district nearest the residence of the managing owner, upon the use of every foreign built yacht, pleasure boat or vessel, not used or intended to be used in trade, now or hereafter owned or chartered for more than six months by any citizen or citizens of the United States, a sum equivalent to a tonnage tax of \$7 per gross ton.

In lieu of the annual tax above prescribed, the owner may pay a duty of 35 per cent ad valorem thereon, and such yacht, pleasure boat or vessel shall be subject to all the requirements . . . as if said yacht had been built in the United States.

This section shall not apply to a foreign built vessel

admitted to American registry.

#### COAST AND GEODETIC SURVEY

The Coast and Geodetic Survey of the Department of Commerce is charged with the survey of the coasts of the United States and coasts under the jurisdiction thereof, and the publication of charts, tidal observa-tions and sailing directions covering the coasts. This includes base measure, triangulation, topography and hydrography along the coasts; the survey of rivers to the head of tide water or ship navigation, deep sea soundings, temperature and current observations along the coasts and throughout the Gulf of Japan streams, magnetic observations and researches and the publication of maps showing the variations of terrestrial magnetism; gravity research, determination of heights, the determination of geographic positions by astronomic observations for latitude, longitude and azimuth, and by triangulation to furnish reference points for state surveys and to co-ordinate Government surveys.

The results obtained are published in annual reports and in special publications; charts upon various scales, including sailing charts, general charts of the coast, and harber charts; tide tables issued annually in advance; coast pilots with sailing directions covering the navigable waters; notices to mariners issued weekly as a joint publication of the Coast and Geodetic Survey and the Bureau of Lighthouses and containing current information necessary for safe navigation; catalogues of charts and publications, and such other publications as may be required to carry out the organic law governing the survey.

Office for Oregon, Washington and Alaska, Burke Building, Seattle-Capt. J. F. Pratt, Inspector.

Office for California and Hawaii, Custom House Building San Francisco—Capt. E. F. Dickens.

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## **Export of Animals**

### Inspection, Humane Handling, and Transport of Animals

#### General Provisions

No cattle, sheep, swine, or goats shall be exported from the United States to any foreign country unless and until the same have been inspected and found free from disease or exposure thereto by an inspector of the Bureau of Animal Industry. Unless the Secretary of Agriculture shall have waived the requirement of a certificate of inspection for the particular country to which such animals are to be exported. No clearance shall be issued to any vessel carrying such animals, unless and until a certificate of inspection showing freedom from disease or exposure thereto shall have been issued by the Department of Agriculture. The requirement of a certificate for shipments of such animals to Cuba, the West Indies, Mexico, Central America, and the countries of South America, excepting Argentina and Uruguay, is hereby waived.

#### Transportation from Yards to Steamers

Export animals shall not be unnecessarily passed over any highway or removed to cars or boats which are used for conveying other animals. Boats transporting said animals to the ocean steamer must first be cleansed and disinfected with lime wash under the supervision of the inspector of the port, and the ocean steamer shall, before receiving said animals, be thoroughly cleansed or disinfected in accordance with the directions of said inspector. When passage upon or across the public highway is unavoidable in the transportation of animals from the cars to the boat it shall be under such careful supervision and restrictions as the inspector may direct.

#### Supervision to Steamers-Clearance Papers

The supervision of the movement of animals from cars, yards, and stables to the ocean steamer at the port of export will be in charge of the inspector of the

port.

The inspector at the port of export shall notify the collector of the port, or his deputy, of the various shipments of animals that are entitled to clearance papers.

## Notification to Inspectors of Intended Shipments on Steamers

The exporters of animals or the owner, agent, or master of any vessel desiring to transport animals from any port of the United States to a foreign country shall notify the inspector in charge of the port from which said vessel is to clear of such intended shipment at least two days in advance thereof, and if the regulations prescribed have been complied with a clearance shall be authorized by such inspector.

#### Attendants

There shall be one attendant for each 35 head of cattle, not including foremen, upon steamers having water pipes extending the entire length of both sides of compartments; and upon steamers not so fitted there shall be one attendant for each 25 head of cattle shipped. Provided, however, that when all the attendants are experienced and capable men, there shall be one attendant for each 50 head of cattle upon steamers having water pipes extending the entire length of both sides of compartments, and not less than 3 feet in width of alleyways, if a competent watchman for night duty for each shipper is furnished in addition; and upon steamers not so fitted there shall be one experienced attendant to each 35 head of cattle shipped, together with watchmen as provided above.

For horses there shall be one attendant for each

There shall also be additional help furnished by the captain of the vessel when water has to be pumped by hand.

The employment of all attendants shall be subject to the approval of the inspector of the port, and men so employed shall be reliable and signed as a part of the ship's crew and under the control of the captain of the vessel. They shall be furnished with well-lighted and well-ventilated quarters and with bedding and table utensils. Experienced foremen shall be in charge of the animals, and not less than one-half of the attendants must be experienced men who have made previous trips with stock.

Loading, Etc.

The inspector, or one of his assistants, shall supervise the loading of the animals and see that they are properly stowed, and, as far as practicable, tied; that a sufficient amount of good, wholesome feed is properly stowed; and that all the requirements of these regulations have been complied with. In case the regulations have not been complied with, he shall immediately notify the Chief of the Bureau of Animal Industry. In hot weather the tying of the cattle may, in the discretion of the inspector, be in part omitted until after the steamer has cleared and is in motion.

#### Certificates of Inspection

The inspector at the port of shipment shall issue certificates of inspection for cattle, sheep, swine, and goats, which are to be exported to any foreign country, unless the Secretary of Agriculture shall have waived the requirement for such certificate of inspection for export to the particular country to which such animals are to be shipped. Each certificate shall cite the name of the shipper, the name of the consignee, and the destination. The certificates shall be issued in serial numbers; only one certificate shall be issued for each consignment, unless otherwise directed by the Chief of the Bureau of Animal Industry. The certificates shall be delivered to the chief officer of the vessel upon which said consignment of live stock is to be transported after the loading and stowing is completed, and continue with the shipment to destination, where it may be delivered to the consignee.

#### Headropes, Etc.

Cattle shall be tied with 3/4-inch rope, which shall not be used more than once, and must be either manila or sisal.

All headropes, halters, blankets, stable utensils, feed bags, and feed troughs, if returned to this country, must be disinfected under the supervision of the inspector of the port unless an affidavit it furnished by the captain of the vessel that the same have been disinfected, describing the manner of disinfection, or unless such affidavit is furnished by the proper official at the port where the animals are unloaded.

### ASBESTOS PRODUCTS

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Manufacturers - - Seattle, Wash.

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## Instructions for Obtaining Help

### Provisions for Aiding Vessels in Distress

In the event of a vessel stranding on the coast of the United States or of the United Kingdom, and the lives of the crew being placed in danger, assistance will, if possible, be rendered from the shore in the fol-

lowing manner, namely:

1. A rocket or shot with a thin line attached will be fired across the vessel. Get hold of this line as soon as possible, and when you have secured it let one of the crew be separated from the rest, and if in the day time, wave his hat or his hand, or a flag or handkerchief; or, if at night, let a rocket, a blue light, or a gun be fired, or let a light be displayed over the side of the ship and be again concealed as a signal to those on

2. When you see one of the men on shore separated from the rest, have a red flag, or (if at night), show a red light, and then conceal it; haul upon the rocket line until you get a tail block with an endless fall rope

through it.
3. Make the tail of the block fast to the mast, about fifteen feet above the deck, or if the masts are gone, to the highest secure part of the vessel. When the tail block is made fast, and the rocket line unbent from the whip, let one of the crew, separated from the rest make the signal required by Article 1.

4. As soon as the signal is seen on shore, a hawser

will be bent to the whip line, and will be hauled off to

the ship by those on shore.

5. When the hawser has been got on board, the crew should at once make it fast to the same part of the ship that the tail block is made fast to, only about eighteen inches higher, taking care that there are no turns of the whip line around the hawser.

To avoid turns the end of the hawser should be taken up between the two parts of the whip. In case this is not done, there will be a turn of the whip around the hawser, which may cause considerable delay before it is taken out.

6. When the hawser has been made fast on board,

the signal directed to be made in Article 1 is to be re-

peated.

7. The men on shore will then pull the hawser taut, and by means of the whip line will haul off to the ship a sling life-buoy or life-car, into which the person to be hauled ashore is to get in and be made fast. When he is in, and secure, one of the crew must be separated from the rest, and again signal to the shore, as directed in Article 1. The people on shore will then haul the person in the sling to the shore, and when he has landed will haul back the empty sling, life-buoy, or life-car, to the ship for others. This operation will be repeated until all persons are hauled ashore from the wrecked vessel.

8. It may sometimes happen that the state of the weather and the condition of the ship will not admit of a hawser being set up; in such case a sling lifebuoy will be hauled off instead, and the shipwrecked persons will be hauled through the surf, instead of

along the hawser.

Masters and crews of stranded vessels should bear in mind that success in landing them in a great measure depends upon their coolness and attention to the rules here given.

The system of signaling must be strictly adhered to;

and all women, children, passengers and helpless persons should be landed before the crew of the ship.

#### General Information

Upon the Pacific Coast the stations are opened and manned the year round. They are provided with the International Code of Signals, and vessels can, by opening communication with them, be reported, as in general they are connected with the coast systems of telephones and telegraph; the latitude and longitude of the station can be obtained, where determined; information as to the weather probabilities, in most cases, can be furnished; or if a vessel be crippled or disabled, a steam tug or coast guard cutter will, if requested, be telegraphed for to the nearest port, where facilities for telegraphing exist. The crews of all stations are also drilled and familiar with signalling by the wigwag system.

All services are performed by the coast guard crews without other compensation than their wages from the Government, and they are strictly forbidden to solicit or receive rewards.

The station crews patrol the beach from two to four miles each side of their stations four times between sunset and sunrise, and if the weather is foggy the patrol is continued through the day.

Each patrolman carries Coston signals. Upon discovering a vessel standing in to danger he ignites one of them which emits a brilliant red flame of about two minutes duration, to warn her off, should the vessel be ashore, to let the crew know that they are discovered and assistance is at hand.

If the vessel is not discovered by the patrol immediately after striking, rockets or flareup lights should be burned, on board, or if the weather be foggy, guns should be fired to attract attention, as the patrolman may be some distance away on the other part of his

beat.

Masters are particularly cautioned if they should be driven ashore anywhere in the neighborhood of the stations, especially on any of the sandy coasts where there is not much danger of the vessel's breaking up immediately, to remain on board until assistance arrives, and, under no circumstances should they attempt to land through the surf in their own boats until the last hope of assistance from the shore has vanished. Often when comparatively smooth at sea a dangerous surf is running, that is not perceptible three or four hundred yards off shore, and the surf when viewed from a vessel, never appears as dangerous as it is. Many lives have unnecessarily been lost by the crews of stranded vessels being thus deceived and attempting to land in the ship's boats.

The difficulties of rescue by operations from the shore are greatly increased when the anchors are let go after entering the breakers, as is frequently done, and the chances of saving life are correspondingly lessened.

Superintendent of the Thirteenth District, which includes the Pacific Coast, is Otto G. Wellander, with office at Room 420 Custom House Building, San Francisco, California.

### Bolcom-Canal Lumber Co. Seattle, Washington

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## **Marine Section**

### Information for Ship Masters and Owners

For the convenience of masters bringing vessels into ports along the Pacific Coast of Canada and the United States there are given in the following article excerpts from quarantine laws and regulations in force in the principal ports, and much other miscellaneous information that it is necessary to have.

For port charges, pilotage, coal bunkers, oil docks, marine surveyors and agents, consuls, government officials, or other information about a particular port lock under the name of the port, which are listed elsewhere.

#### **Ouarantine Laws**

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that it shall be unlawful for any merchant ship or other vessel from any foreign port or other place to enter any port of the United States except in accordance with the provisions of this act and with such rules and regulations of State and municipal health authorities as may be in pursuance of, or consistent with this act \* \* \* Penalty not to exceed \$5,000 \* \* \*

#### (Act of August 18, 1914. Revised Statutes.)

Sec. 4794. There shall be purchased or erected, under the orders of the President, suitable warehouses, with wharves and enclosures, where merchandise may be unladen and deposited, from any vessel which shall be subject to a quarantine or other restraint. \* \* \*

Sec. 4795. Whenever the cargo of a vessel is unladen at some other place than the port of entry or delivery under the foregoing provisions, all the articles of such cargo shall be deposited, at the risk of the parties concerned therein, in such public or other warehouses as the collector shall designate, there to remain under the joint custody of the collector, and of the owner or master, or other person having charge of such vessel \* \* \* until the articles may be safely removed without contravening such health laws.

#### (Act of March 2, 1901.)

Sec. 1. That any vessel sailing from any foreign port without the bill of health required by section 2 of this act, and arriving within the limits of any collection district of the United States, and not entering or attempting to enter any port of the United States, shall be subject to such quarantine measures as shall be prescribed by regulations of the Secretary of the Treasury, and the cost of such measures shall be a lien on said vessel, to be recovered by proceedings in the proper district court of the United States. \* \* \*

#### Foreign Regulations

Sec. 2. Masters of vessels clearing from any foreign port, or from any port in the possessions of other dependencies of the United States for a port in the United States or its possessions or other dependencies, must obtain an original bill of health, in duplicate, signed by the proper officer or officers of the United States as provided for by law. \* \* \*

Sec. 3. Vessels clearing from a foreign port or from any port in the possessions or other dependencies of the United States for any port in the United States, its possessions or other dependencies, and entering or calling at intermediate ports, must procure at all said ports a supplemental bill of health in duplicate signed by the proper officer or officers of the United States, as provided in the law. If a quarantinable disease has appeared on board the vessel after leaving the original port of departure, or other circumstances presumably render the vessel infected, the supplemental bill of health should be withheld until such sanitary measures have been taken as are necessary.

Sec. 4.\*\*\* Vessels plying between ports in British Columbia, and adjacent ports in the United States; also plying between Mexican ports on the Rio Grande and adjacent ports in the United States, are exempt from the provisions of section 2. \* \* \*

Sec. 6. Inspection is required of (a) All vessels from ports at which cholera, yellow fever, or plague in men or rodents prevail, or at which small-pox or typhus fever prevails in epidemic form, and at which a medical officer is detailed. (b) All Vessels carrying steerage passengers; but need not include the inspection of such passengers and their living apartments, if sailing from a healthful port.

Sec. 7. Inspection of the vessel is such an examination of the vessel, cargo, passengers, crew, personal effects of same, including examination of manifests and other papers, food and water supply, the ascertainment of its relations with the shore, the manner of loading and possibilities of invasion by rats and insects as will enable the inspecting officer to determine if these regulations have been complied with.

Sec. 8. When an inspection is required, it should be made by daylight, as late as practicable before sailing. The vessel should be inspected before the passengers go aboard, the passengers just before embarkation, and the crew on the deck, and no communication should be had with the vessel after such inspection except by permission of the officer issuing the bill of health.

Sec. 17. Any article presumably infected, which cannot be disinfected, should not be shipped.

#### Domestic Regulations

Sec. 59. The following regulations are the required minimum standard and do not prevent the addition of such other rules as, for special reasons, may be legally made by state or local authorities.

Sec. 60. Every vessel subject to quarantine inspection, entering a port of the United States, its possessions or dependencies, shall be considered in quarantine until given free partique. Such vessel shall fly a yellow flag at the foremast head from sunrise to sunset, and shall observe all the other requirements of vessels actually quarantined.

Sec. 61. Vessels arriving at ports of the United States under the following conditions shall be inspected by a quarantine officer prior to entry:

(a) All vessels from foreign ports except those covered by paragraph 4, provided the latter are not inspected.

(b) Any vessel with sickness on board.

(c) Vessels from domestic ports where cholera, plague, or yellow fever prevails, or where small-pox or typhus fever prevails in epidemic form.

(d) Vessels from ports suspected of infection with yellow fever, having entered a port north of the southern boundary of Maryland without disinfection, shall be subject to a second inspection before entering any port of said latitude during the quarantine season of said port.

Sec. 62. The inspection of vessels required by these regulations shall be made between sunrise and sunset, except in case of vessels in distress. Exception may also be made in the case of fruit vessels carrying perishable cargoes and regular line vessels carrying passengers, under regulations approved by the Secretary of the Treasury.

Sec. 65. No person except the quarantine officer, his employes, United States customs officers, or pilots, shall be permitted to board any vessel subject to quarantine inspection until after the vessel has been inspected by the quarantine officer and given free partique. \* \* \*

Sec. 66. Towboats or any other vessels having had communication with vessels subject to inspection shall themselves be subject to inspection.

Sec. 68. When a vessel arriving at quarantine has on board any of the communicable but nonquarantinable diseases, the quarantine officer shall promptly inform the local health authorities \* \* \* in ample time \* \* \* to permit the case being seen by the local authorities before discharge from the vessel.

Sec. 69. Vessels arriving under the following conditions shall be placed in quarantine:

- (a) With quarantinable disease on board, or having had such disease on board during the voyage.
- (b) Any vessel which the quarantine officer considers infected with quarantinable disease.
- (c d e f) Vessels from southern ports durnig the season of close quarantine.
- Sec. 71. Pilots shall be detained in quarantine a sufficient time to cover the period of incubation of the disease for which the vessel is quarantined, if \* \* \* such pilots have been exposed to infection.
- Sec. 73. Street cleanings, street sweepings or any other form of ballast containing organic refuse must be discharged at the quarantine station.
- Sec. 75 After a vessel has been rendered free from infection, it may be furnished with a fresh crew and released from quarantine, while all or part of the personnel are detained. \* \* \*
- Sec. 133. When practicable, alien immigrants arriving at Canadian or Mexican ports, destined for the United States, shall be inspected at the Canadian or Mexican port of arrival by the United States Customs or medical officer, and be subjected to the same sanitary restrictions as are called for by the rules and regulations governing United States ports.

Sec. 134. Inspection cards will be issued by the consular or United States medical officer at the Canadian or Mexican port of arrival to all such alien immigrants, and labels affixed to their baggage, as is required at foreign ports in the case of those coming direct to any port of the United States.

The following provisions, while directed to masters and others entering the Port of Seattle, apply to all parts of the Pacific:

To Masters and Agents of Vessels, Owners and Others

Concerned:

By direction of the surgeon general, and in accordance with the quarantine laws and regulations of the United States, you are advised that vessels engaged in foreign and interstate commerce are required to observe the following precautions when calling at the port of Seattle, Washington:

1. All vessels docking at Seattle must fend off from the wharf a sufficient distance, usually six feet but not less than four feet, to prevent rats from leaping from wharf

to vessel or from vessel to wharf.

2. Standard rat-guards not less than three feet in diameter, fixed securely and perpendicularly, must be maintained constantly in position on all mooring lines and on all pipes and hose, whenever such lead to wharves, other vessels or ashore. Where lines lead from hawse-pipes guards may be omitted, provided such hawse-pipes are securely stopped with wood or metal in an approved manner.

3. Between the hours of sunset and sunrise, all gangplanks, ladders or other means of communications with the wharf must remain aboard or ashore, with these exceptions: (a) the gang-plank may be used under the direction of the watchman for the immediate discharge of passengers or crew, if at once removed; (b) the gangplank or ladder may remain continuously in position after sunset, provided that, while in such position, two lights, each of candle power not less than an ordinary lantern, be securely fixed, one to the head and one to the foot of such gang-plank or ladder, and a ship's watchman be stationed and remain constantly at the head or foot of such means of communication as a guard to prevent the entrance or exit of rats to or from the vessel.

4. Vessels from Oriental and South American ports

4. Vessels from Oriental and South American ports are required to be fumigated once in six months as a routine procedure and oftener when conditions in ports of call

require it.

5. Vessels which may have been exposed to infection in Seattle will be fumigated twice on successive trips; vessels which have received two such fumigations and which comply with all other requirements will not be fumigated again until so directed by the surgeon-general.

6. Vessels granted provisional pratique (as for example, on account of cargo) and allowed to enter Seattle with the understanding that they be fumigated at this port, will be required to bear all cost of fumigation unless accompanied by proper authorization to the contrast.

panied by proper authorization to the contrary.

7. Vessels requiring fumigation must furnish a sufficient number of the crew to handle and place pots and sulphur without loss of time, and some officer having authority over these men must be present and on duty at the time

of fumigating.

8. Vessels destined for ports in other states or dependencies of the United States or for ports in the Republic of Panama should secure certificate from the State Commissioner of Health before departure.

9. Owners, agents or masters of vessels engaged in foreign or inter-state trade should notify the State Commissioner of Health promptly of the arrival and departure of vessels under their charge. This will often avert serious inconvenience to the vessel.

10. Consistent with their proper enforcement, it is desired that the above regulations be applied with the least amount of delay and inconvenience to the vessels concerned. Prompt compliance will in each instance meet the full co-operation of the State Commissioner of Health.

11. The State Commissioner of Health has authorized and directed that the measures herein outlined shall apply to vessels plying between Seattle and other ports in the State of Washington, subject to such modification as local conditions may seem to warrant.

#### HYDROGRAPHIC SERVICE

Branches of the United States Hydrographic Office are maintained for the benefit of mariners without regard to nationality, and free of expense. Navigators are cordially invited to visit the offices, where complete sets of charts and sailing directions of the world are kept on hand, for comparison and reference, and the latest information can always be obtained regarding lights, buoys, dangers to navigation, and all matters of interest to ocean commerce. Pilot charts, notices to mariners, and other publications are on hand for gratuitous distribution to those interested. Effective Jan. 1, 1919, a small charge is now made for lists of lights and day marks. Pilot charts are mailed regularly each month, to all shipmasters, mates, and others co-operating with the Hydrographic Office or Weather Bureau in the work of collecting nautical or meteorological data. Notices to mariners are published weekly, and contain the very latest information regarding changes in the aids to navigation, the discovery of rocks, shoals, reefs, etc.; copies of these notices can be obtained by mariners, free of charge, by applying to the Hydrographic Office, to one of the branch offices, or to any of the agencies in seaboard cities. They are also on file in all United States Consulates, where every facility will be afforded for their inspection. An important function of the office is the operation of the time service. The correct time may be obtained by use of the telephone, if not convenient to call in person.

Mariners are urgently requested to become contributors to the Hydrographic Office, to take their blank forms for recording nautical data, and to inform the office immediately of any newly discovered danger to navigation, or of the establishment or change of any aid to navigation, to the end that more accurate charts may be published and the charts and sailing directions kept corrected. A postal card will bring the necessary blank forms Remember that all services are free; that we want you to call upon us and give us the benefit of your experience, that others may profit by it.

Below will be found a list of the Branch Hydrographic Offices on the Pacific Coast, together with the officers and employees attached to each:

Branch U. S. Hydrographic Office, Merchants' Exchange, San Francisco, Cal.—Charles P. Huff, Lieutenant Comndr., U. S. N., in charge; J. T. McMillan, Nautical Expert.

Branch U. S. Hydrographic Office, Chamber of Com-

merce, Portland, Ore.

Branch U. S. Hydrographic Office, Lowman Building, Seattle, Wash.—Lieut. Comndr. F. H. Hardy, U. S. N.

### OFFICERS OF THE STEAMBOAT INSPECTION SERVICE ON THE PACIFIC COAST

John K. Bulger, U. S. Supervising Inspector, First District, New Custom House Bldg., San Francisco, Cal.

#### Inspectors of Hulls

Jos. J. Meany, Traveling Inspector, New Custom House Bldg., San Francisco, Cal.

James Guthrie, Inspector, New Custom House Bldg.,

San Francisco, Cal. Frank H. Turner, Assistant, New Custom House Bldg.,

San Francisco, Cal. Charles A. Martin, Assistant, New Custom House Bldg.,

San Francisco, Cal. Charles F. Austin, Assistant, New Custom House Bldg.,

San Francisco. Cal. Chas. F. Herriman, Assistant, New Custom House Bldg.,

San Francisco, Cal. Thos. P. Deering, Assistant, New Custom House Bldg.,

San Francisco, Cal.

Fred W. Richardson, Assistant, New Custom House Bldg., San Francisco Cal. Thos. J. Sullivan, Assistant, New Custom House Bldg.,

San Francisco, Cal.

Thos. R. Craigie, Ambrose A. Clarke, Miss Sophie R. Lassiat, Miss Rita Sicotte, Miss Helen E. Malley, Miss Susan L. Fountain, Clerks, New Custom House Bldg., San Francisco, Cal.

Edward S. Edwards, Inspector, Gasco Building, Port-

land, Oregon

Frank X. Edthofer, Assistant, Gasco Building, Portland, Oregon.

H. F. Astrup, Assistant, Gasco Building, Portland, Oregon.

Arthur F. Merrill, Miss Blanche E. Walker, Clerks, Gasco Building, Portland, Oregon.

S. A. Kennedy, Jr., Inspector, San Pedro, Cal.

John Dahl, Assistant, San Pedro, Cal. Jas. T. Sullivan, Clerk.

Robert T. Bain, Inspector, Honolulu, Hawaii. Miss Edith F. Edgerly, Clerk.

#### Inspectors of Boilers

Joseph P. Dolan, Inspector, New Custom House Bldg., San Francisco, Cal.

Winslow D. Conn., Assistant, New Custom House Bldg., San Francisco, Cal.

John B. Wolters, Assistant, New Custom House Bldg.,

San Francisco, Cal. Edward O. Teall, Assistant, New Custom House Bldg.,

San Francisco, Cal. Henry V. Barbieri, Assistant, New Custom House Bldg.,

San Francisco, Cal.
Thomas J. Young, Assistant, New Custom House Bldg.,

San Francisco, Cal. Clarence M. King, Assistant, New Custom House Bldg.,

San Francisco, Cal.

Chas T. Tiernan, Assistant, New Custom House Bldg., San Francisco, Cal.

Jos. A. Moody, Assistant, New Custom House Bldg., San Francisco, Cal.

John E. Wynn, Inspector, Gasco Building, Portland, Oregon.

George Q. Weldin, Assistant, Gasco Building, Portland, Oregon.

Thos. Duffy, Assistant, Gasco Building, Portland, Oregon.

Carl F. Lehners, Inspector, San Pedro, Cal. Thos. O. Daly, Assistant, San Pedro, Cal. Thos. J. Heeney, Inspector, Honolulu, Hawaii.

#### **Eleventh District**

William Fisher, U. S. Supervising Inspector.

#### Inspectors of Hulls

Donald S. Ames, Inspector, 506 Securities Bldg., Seattle,

Ralph McNelley, Assistant, 506 Securities Bldg., Seattle, Wash

George Tyler, Assistant, 506 Securities Bldg., Seattle, Wash.

Martin I. Taaffe, Assistant, 506 Securities Bldg., Seattle. Wash.

Daniel B. Hutchings, Assistant, 506 Securities Bldg., Seattle, Wash.

Edward Stuart, Assistant, 506 Securities Bldg., Seattle, Wash.

Charles H. White, Assistant, 506 Securities Bldg., Seattle, Wash.

Willis H. Rooks, Wesley E. Walker, Frieda F. Lescher, Mabel H. Thomas, Mrs. Elizabeth G. Hanbey, Clerks, 506

George H. Whitney, Inspector, Odd Fellows Bldg., Juneau, Alaska. George E. Mann, Clerk.

#### Inspectors of Boilers

Harry C. Lord, Inspector, 506 Securities Bldg., Seattle, Wash

Frank H. Newhall, Assistant, 506 Securities Bldg., Seattle, Wash.

Whitmore D. Hill, Assisant, 506 Securities Bldg., Seattle, Wash.

Thomas Short, Assistant, 506 Securities Bldg., Seattle,

William M. Campbell, Assistant, 506 Securities Bldg., Seattle, Wash.

Richard G. Robinson, Jr., Assistant, 506 Securities Bldg., Seattle, Wash.

John F. Oettl, Assistant, 506 Securities Bldg., Seattle, Wash.

Peter G. Peltret, Inspector, Odd Fellows Bldg., Juneau, Alaska.

Savine L. Craft, Inspector, St. Michael, Alaska.

#### LLOYD'S AGENTS

Portland, Ore: Hewett & Co.

San Francisco, Calif.: P. A. Becker, Alaska Commercial Building.

Seattle, Wash.: Balfour, Guthrie & Co.

Vancouver, B. C.: C. Gardiner Johnson. Prince Rupert, B. C.: John Barnsley.
New Westminister, B. C.: Arthur Ma Arthur Mallins, Sub

Agent. Port Townsend, Wash.: Oscar Klocker.

Tacoma, Wash.: Balfour, Guthrie & Co.
Astoria, Wash.: E. M. Cherry.
San Diego, Calif.: J. G. Burne, Sub Agent.
Los Angeles, Calif.: A. Lester Best, Sub Agent.

#### Surveyors Lloyd's Register of Shipping

Portland, Ore.: Ship surveyors, Walter Lang and G. House. Ship and engineer surveyors, J. H. H. G. House.

San Francisco, Calif.: Ship surveyors, A. P. W. McNab and Arnold Bennett. Ship and engineer surveyors, J. S. Blackett, A. W. Lawson, F. G. Archbold, P. McIntosh.

Seattle. Wash.: Ship surveyors, W. S. P. Collins, J. Whitehead, O. Cutting, J. C. Kinghorn. Ship and engineer surveyors, James Fowler, L. Nosworthy, G. Hastie.

Vancouver and Victoria, B. C.: Ship surveyors, F. C. Barnett, Coquitlam, and J. Lunney. Ship and engineer surveyors, J. Murdoch.

## U.S. Foreign Trade Record for 1918

Gains in imports and a decrease of only \$84,119,950 in exports, despite the handicap of embargoes and lack of transportation facilities, were the outstanding features of the foreign commerce of the United States during 1918. Exports took a sharp upward trend in December, the first full month after the cessation of hostilities, an increase of \$44,000,000 resulting as compared with the previous month. Exports for the year which amounted to \$6,149,392,647, outstripped the imports more than three billion dollars. The difference in the total trade for the year as compared with the previous 12 months was a little more than \$4,000,000 in favor of the grand total for 1917, the value of this country's foreign commerce reaching the tremendous sum of \$9,180,697,368.

It is interesting to note that save for the decline of \$10,000,000 in imports during the first year following the outbreak of the great war, imports have since advanced steadily, and in 1918 the total was the highest for the past 13 years. The value of imports for 1918 was \$3,031,304,721, or \$78,836,766 more than the grand total for 1917. Imports for December, last year, slid back, however, as compared

(a) December estimated.

with the month of November—\$211,000,000 against \$251,000,000—and likewise fell short of the record for the corresponding month in 1917 by 17 million dollars.

The declination of gold imports and exports continued. Imports in 1918 aggregated \$62,000,000 and during the year previous the total was \$552,000,000. A relatively proportionate difference marked the exports of gold, with exportations amounting to \$41,000,000 in 1918 as against \$372,000,000 for the year previous. Imports of silver leaped from \$53,000,000 in 1917 to \$71,000,000 in 1918, and the exports reached \$253,000,000 as against \$84,000,000 for 1917.

### Changes in Foreign Trade of the United States During the War

The war record of the foreign trade of the United States shows a decrease in importation of finished manufactures but an increase in the value of food and manu-

Foreign Trade of the United States in		Years by	Principal	Products	
Imports—	•	1015	1016	1017	1010-
	1913	1915	1916	1917	1918a
Raw material for Mfg	. 605	696	1,009	1.268	1,223
Foodstuffs, crude (b)	. 221	243	260	386	346
Foodstuffs, manufactured	. 198	273	339	351	410
Manufactures for Mfg	. 340	261	418	541 388	671 407
Miscellaneous	, 413 15	292 14	346 20	18	14
	. 15	14	20	10	
Total imports Exports, domestic—	.1,793	1,779	2,392	2,952	3,071
Raw material for Mfg	769	567	721	<i>7</i> 81	913
Foodstuffs, crude (b)	170	462	421	509	525
Foodstuffs, manufactured	325	551	648	807	1.383
Manufactures for Mfg	397	476 ·	912	1.318	1.071
Manufactures ready for use	780	1,315	2,625	2,701	2,097
Miscellaneous (c)	. 8	123	94	52	19
Total domestic exports	2.448	3,493	5,423	6.167	6.008
Foreign merchandise reexported	36	61	60	64	99
Total exports	2,484	3,555	5,483	6,231	6,107
<ul><li>(a) December estimated.</li><li>(b) Includes food animals.</li><li>(c) Includes horses and mules.</li></ul>	<del></del> , .	<i>1</i> **			
Foreign Trade of the United States in (In millions of		r Years by	Grand	Divisions	
Imports—	1913	1915	1916	1917	1918a
Europe		546	633	551	313
North America	390	509	658	872	989
South America		322	428	599	625
Asia	281	306	517	758	867
Oceania	35	60	94	<b>9</b> 9	186
Africa	24	35	62	73	92
TotalExports—	1,793	1,779	2,392	2,952	3,071
Europe	1.500	2.573	3.813	4.054	3.795
North America		559	925	1,265	1,344
South America		144	220	312	307
Asia	126	150	365	431	443
Oceania	82	91	106	117	161
Africa	29	37	54	51	58
Total		3,555	5,483	6,231	6,107

facturing material imported. On the export side, the chief increase occurs in food and finished manufactures while raw material shows a reduction in quantity exported.

A compilation by The National City Bank of New York comparing imports of the calendar year 1918 with those of the year preceding the war, 1913, shows that the value of manufactures imported even at the high prices of to-day is slightly less in the calendar year 1918 than in the calendar year 1913 but that the value of raw material imported for manufacture in 1918 was double that of 1913 and of foodstuffs also double that of 1913. Exports of finished manufactures are nearly three times as great in value in 1918 as in 1913; foodstuffs more than three times as great in value while raw material exported shows but a trifling increase in value but a marked fall off in quantity. Manufactures exported in condition ready for use in 1918 are in round terms \$2,100,000,000 against \$780,000,000 in 1913; manufactures for further use in manufacture \$1,100,000,000 against slightly less than \$400,000,000 in 1913; food-stuffs approximately \$1,900,000,000 against \$500,000,000 in 1913; while raw material for manufacturing is but about \$900,000,000 in 1918 against \$770,000,000 in 1913, despite the fact that raw cotton, the principal article of raw material, sent out of the country shows an average export price in 1918 of about 31c per pound against

## Report of Bureau of Foreign and Domestic Commerce

COUNTRIES	IMPO	ORTS	EXPORTS								
COUNTRIES	1917	1918	1917	1918							
EUROPE	Dollars	Dollars	Dollars	Dollars							
Austria-Hungary Belgium	64,937 158,022	97,323 13,964	56,080,886	154 640 220							
France	98,639,653	59,509,742	940,791,331	154,649,338 931,199,774							
Germany	159,352	317,706	3,275								
Netherlands	22,744,504	8,824,419	57,540,570	11,369,269							
Russia in Europe	12,350,179	6,784,603	315,250,020	8,902,449							
United Kingdom: England	229,494,043	118,513,817	1,814,936,817	1,952,878,226							
Scotland	28,402,033	12,870,346	173,123,451	99,976,058							
Ireland	22,184,099	17,230,652	20,609,373	8,446,396							
Total United											
Kingdom	280,080,175	148,614,815	2,008,669,641	2,061,300,680							
Total Europe, in-											
cluding Coun- tries not listed.	551 144 500	318 127 305	4,061,728,923	2 050 705 005							
tiles not listed.	331,144,377	310,127,303	4,001,728,923	3,838,703,903							
NO. AMERICA				l							
Bermuda	988,364	1,074,534	2,478,476	2,120,751							
British Honduras	1,819,403	2,635,162	2,167,521	2,295,952							
Canada	413,674,846	451,961,875	828,919,971	886,848,501							
Central American States:											
Costa Rica	6,374,606										
Gautemala Honduras	10,470,225 4,957,510	8,011,685 5,295,086		4,241,977 5,033,932							
Nicaragua	3,813,248	4,792,351	4,731,071	4,503,808							
Panama	7,484,494	4,792,351 8,757,403	27,638,661	21,116,503							
Salvador	5.525,073	8,307,358	4,301,324	3,902,572							
Total Central	38,625,156	44,095,527	51,760,110	40,899,065							
Amer. States											
Mexico	130,526,935	1		97,845,536							
etc		3,191	522,559	267,581							
Total North			ł								
. America	871,982,524	976,400,347	1,261,703,532	1,325,582,571							
SO. AMERICA	470 045 022										
Argentina Bolivia	178,245,833 51,948	227,128,348 451,932	107,098,895 3,498,618	105,215,818 5,289,008							
Brazil	145,274,931	98.038.132	66,157,952	57,422,512							
Chile	142.597.929	165,782,920 24,723,035	57,549,304	66,399,300							
Colombia Ecuador	27,581,217 10,507,223	24,723,035	12,573,334	10,546,409							
Falkland Islands	400,000	10,121,834	5,432,090 36,887	4,171,684 295,660							
Guiana:	100,000		30,887	2,5,000							
British	220,259	394,017		5,510,583							
Dutch	1,473,191	605,478	1,553,248								
Paraguay	97,029	21,769 140,275	881,066 504,388	775,263 700,595							
Peru	43,471,316	34,423,025		21,709,751							
Uruguay	33,175,381	35,583,216	18,414,054	16,193,451							
Venezuela	15,722,275	11,957,224		7,161,345							
Total So. America	598,818,532	609,371,205	311,893,023	302,840,975							

12c per pound in the year immediately preceding the war. In fact the quantity of cotton exported in 1918 was but about 2,000,000,000 pounds against 4,482,000,000 in 1913.

The value of finished manufactures exported shows an enormous increase, being for the calendar year 1918 in round terms \$6,000,000,000 of domestic manufactures against \$2,450,000,000 in 1913. While this great increase occurs in part in war material, it is not by any means confined to this class of merchandise, for the value of iron and steel manufactures exported in 1918 shows a total of over \$1,000,000,000 against \$294,000,000 in 1913, and comparatively little of the increase in iron and steel manufactures exported occurs in war materials. In food-stuffs, the increase occurs in material sent to the allied countries of Europe. The value of foodstuffs exported during the year 1918 is in round terms \$1,900,000,000 against \$495,000,000 in 1913 being thus four times as much in value in 1918 as in the year preceding the war. While a part of this increase in foodstuffs value is due to higher prices there is a marked increase in quantity, especially in meats. The fresh beef exported in 1918 shows a total of about 450,000,000 pounds against less than 7,000,000 pounds in 1913.

In the distribution of trade by countries and grand divisions, imports from Europe show a reduction of more than one-half, the total from Europe in 1918 being but a trifle over \$300,000.000 against \$865,000,000 in 1913. In the trade with all the other grand divisions, however, the imports show an increase. From North America, the imports of 1918 are nearly \$1,000,000,000 against less than \$400,000,000 in 1913; South America over \$600,000,000 against less than \$200,000,000; Asia \$870,000,000 against \$280,000,000 in 1913; and Oceania \$186,000,000 against \$35,000,000 in 1913. The increase in imports from South America occur chiefly in wool, hides, copper, nitrate, coffee and cacao; from Asia in rubber, tin, raw silk, fibres, jute bagging and food oils; from Oceania hemp, wool, copra and cocoanut oil, and from North America raw sugar, petroleum and miscellaneous manufacturing material. On the export side, the total to

	1917	1918	1917	1918
ASIA	Dollars	Dollars	Dollars	Dollars
China, leased terri-	125,106,020	110,970,969	40,292,059	52,570,579
tory: British French	5,922	14,057	20,810 229,231	878 293,641
German	47,104 14,817,698	72,362 29,835,185	260,814 4,956,557	93,422 6,176,440
Total China	139,976,744	140,892,573	45,759,471	59,134,960
Chosen	102,760	139,271	1,793,348	▶ 1,825,676
East Indies: British—				
British India Straits Settle-	101,057,067	129,688,009	33,599,396	40,398,458
ments Other British	127,562,633 31,010,197	150,231,422 19,188,676	8,204,417 1,023,921	9,948,490 1,013,907
Total British East Indies	259,629,897	299,108,107	42,827,734	51,360,855
Dutch Ea. Indies French Ea. Indies Portuguese East	88,620,800	75,074,667 3,721	26,992,354 218,707	23,376,469 663,102
Indies Hongkong	10.383.561	404 30,068,279	3,784 15,747,484	9,897
Japan	253,669,709	301,919,771	186,340,304	24,665,372 273,819,586
Russia in Asia Siam	2,164,252 149,162	3,975,404 174,892	109,260,439 1,051,858	8,433,069 1,577,122
Total Asia, in- cluding coun-				.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
tries not listed.	758,237,165	853,443,245	431,261,460	445,549,169
OCEANIA				
British Oceania:	05 010 150	73,289,997	50 067 570	70 540 300
Australia New Zealand	25,012,150 6,990,053	21,259,532	58,967,578 16,318,873	.79,568,398 22,274,960
Other British	2,276,994	4,091,141	634,783	863,987
Total British Oceania	34,279,197	98,640,670	75,921,234	102,707,345
French Oceania	1,849,558	2,887,549	1,029,898	1,438,148
German Oceania Philippine Islands	705,800 62,386,641	992,718 85,935,220	450,719 38,140,152	393,033 52,976,182
Total Oceania	99,221,196	188,456,157	115,542,003	157,514,708

Europe is \$3,780,000,000 in 1918 against \$1,500,000,000 in 1913, the increase occurring chiefly in war materials and food supplies for the war area. To South America the exports have doubled, being in 1918 \$300,000,000 against a little less than \$150,000,000 in 1913, the increase occurring chiefly in manufactures. To Asia the exports have more than trebled in value, being in 1918 about \$440,000,000 against \$125,000,000 in 1913, this increase being also chiefly in manufactures.

The fall off in imports from Europe is of course due to the fact that Great Britain, France, Italy and Belgium had little to spare and were too much occupied to justify attention to exportation, while the Central Powers from which there were large imports before the war were also lately cut off especially after our entrance into the war. Much merchandise originating in the British and Dutch colonies formerly imported by the mother country and re-exported to the United States is now being sent direct from the place of production to our ports.

#### Commerce of the World

#### World's Sources of Supply

The following figures are an average for three years preceding the European war. All figures dealing with such matters during the war do not reflect normal conditions.

#### Meat

#### (Distribution of Live Stock)

Cattle: British India, 91,666,361; United States, 71,-267,000; Russian Empire, 43,204,000; Argentina, 25,844,-000; Germany, 20,589,856; Austria-Hungary, 16,249,535; France, 14,110,480; United Kingdom, 11,696,963.

Pigs: United States, 56,084,000; Germany, 22,080,000; Russian Empire, 12,734,000; Austria-Hungary, 12,012,997; France, 7,049,012; United Kingdom, 4,041,245.

#### Wheat

(World's Principal Crops in Bushels) United States, 664,600,000; Russia, 569,500,000; France, 310,500,000; Austria-Hungary, 229,300,000; British India, 229,300,000; Argentina, 209,300,000; Italy, 150,800,000; Germany, 138,400,000; Canada, 114,500,000; Spain, 110,000,000; United Kingdom, 57,700,000.

#### · (A Year's Production in Lbs)

India, 248,020,298; China, 214,683,333; Ceylon, 179,834,-462: Japan. 60.455.913: Java. 26.127.110.

#### Sugar

(A Year's Production in Tons)
Cane: India, 2,951,900; Java, 945,774; Cuba, 940,130;
Hawaii, 521,123; Br. W. Indies, Br. Guiana, 293,410;
United States, 221,719; Porto Rico, 217,000; Australia, 205,576; Mauritius, 201,273.
Beet: Germany, 2,124,326; Russia, 1,125,997; Austria-Hungary, 1,023,963; France, 656,832; United States, 420,-

000; Belgium 277,814.

#### Rice

(A Year's Production in Tons)
China, 27,500,000; India, 22,110,000; Java, 4,704,000;
Japan, 4,693,000; French Indo-China, 1,653,000; Siam, 800,000; Italy, 712,000; United States, 656,000.

#### Coffee

(A Year's Production in Lbs)
Brazil, 2,414,500,000; Dutch E. Indies, 101,800,000;
Guatemala, 81,009,000; Colombia, 70,000,000; Venezuela
68,900,000; Haiti, 59,800,000; Mexico, 56,000,000; Salvador, 55,000.000

#### Cocoa

(A Year's Production in Tons)
Brazil, 34,270; Ecuador, 31,142; St. Thomas (W. Africa), 30,094; Trinidad, 23,260; Brit. W. Africa, 22,830; Venezuela, 17,160; S. Domingo, 15,057; Grenada, 6,482.

#### Wine

(A Year's Production in Gals.)
France, 1,331,900,000; Italy, 840,890,000; Spain, 418,616,000; Algeria, 181,031,000; Austria-Hungary, 174,282,000; Portugal, 113,300,000; Germany, 68,991,000.

#### Tobacco

(A Year's Crop in Cwts.)

(A Year's Crop in Cwts.)
United States, 6,411,000; India, 5,000,000; Russia, 1,447,000; Dutch East Indies, 1,001,000; Japan, 895,000; AustriaHungary, 810,000; Germany, 577,000; Cuba, 367,000.
A year's consumption in lbs. per head:
Holland, 7-5; Belgium, 6-6; United States, 5-8; Germany, 3-5; Austria-Hungary, 2-68; France, 2-2; Canada, 2-72; Australia, 2-58; United Kingdom, 1-98.

#### Rubber

#### (A Year's Production in Tons)

Brazil, 34,900; West Coast of Africa, 14,800; Mexico. 8,000; Further India and E. Indies, 6,800; Congo and Sudan, 6,000; Bolivia, 2,900; Peru, 2,700; Ceylon and India, 1.430.

### Foreign Commerce of the Four Principal Countries

The Foreign Commerce of the Principal Countries as Divided Between the Four Chief Commercial Rivals. The figures represent the Annual Foreign Trade (imports and exports combined) in thousands of dollars, being the average of three years preceding the war.

Country	United Kingdom	Germany	United States	France	Other Countries	Total
United Kingdom		371,920	781,555	368,385	3,520,415	5,442,275
Germany	468,575		469,520	214,715	2,645,015	3,797,825
United States	804,160	416,730		231,470	1,721,525	3,174,155
France	417,735	248,985	202,255		1,387,740	2,256,880
Netherlands	322,290	720,970	164,500	20,710	787,640	2,016,100
Belgium	167,035	224,525	80,670	219,210	544,275	1,235,715
India	453,080	79,055	57,110	41.800	400,905	1,031,950
Austro-Hungary	92,985	433,055	59,760	31,770	377,850	995,370
Russia	178,650	310,010	33,405	53,920	305,735	881,720
Italy	125,180	148,555	118,190	85,620	381,945	859,490
Argentina	167,665	80,245	56,505	62,495	273,365	640,385
Canada	217,865	9,080	297,410	10,645	62,630	597,630
Australia	307,865	4,723	42,805	33,840	142,555	574,295
Switzerland	55,060	154,775	61,495	80.005	171.320	522,655
China	65,515	15,925	49,000	24,320	349,500	504,260
Japan	68,490	28,125	104,490	22,805	223,335	447,245
Brazil	93,660	69,910	111,740	44,740	114.321	434,360
Spain	94,380	27,755	33,420	68,555	158,555	382,620
Denmark	114,910	102,325	40,885	5,095	102,960	371,225
Straits Settlements	69,600	7,000	18,270	10,700	263,175	368,745

#### The World's Foreign Trade

Average for Three Years Preceding the War, in Thousands of Dollars

Country	Imports	Exports	Total
United Kingdom	3,077,750	1,964,525	5,042,275
Germany	2,126,580	1,671,250	3,797,830
United States	1,349,990	1,824,625	3,174,155
France	1,196,050	1,060,830	2,256,880
Holland	1,116,525	899,565	2,016,110
Belgium	697,390	538,375	1,235,765
India	448,830	583,120	1,031,950
Austro-Hungary	502,860	492,510	995,370
Russia	365,270	516,450	881,720
Italy	487,220	372,270	859,490
Argentina	287,195	353,185	640,380
Canada	324,305	273,325	597,630
Australia	243,900	330,390	574,290
Switzerland	306,835	215,820	522,655
China	312,980	191,280	504,260
Japan	233,455	213,790	447,245
Brazil	182,040	252,320	434,360
Spain	148,695	183,930	382,625
Denmark	206,285	164,940	371,225
Straits Settlements	195,665	173,080	368,745
Sweden	171,705	136,960	313,665
Cape of Good Hope	87,260	213,540	300,800
Egypt	125,480	128,815	254,295
Mexico	110,830	134,220	245,050
Dutch East Indies	97,355	139,525	236,880
Transvaal	82,760	151,260	234,026
	142,575	89,420	231,995
Turkey	105,165	116,630	220,345
Chile	99,830	109,065	208,895
Rumania	84,445	94,950	179,895
New Zealand	83,310	90,805	174,115
Norman	98,155	64,245	162,400
Norway	86,605	62,530	149,135
Algeria	70,040	33,135	103,175
Portugal	53,325	44,810	98,175
	42,570	41,360	83,980
Ceylon	41,100	37,240	78,340
Transport	36,700	37,530	74,230
Uruguay	28,245	43,655	71,900
	38,335		69,815
Persia	28,885	31,480 39,110	67,995
Siam			63,370
Philippine Islands	29,970	33,400	54,535
Peru	26,350	28,185	54,335
Natal	34,795	14,640	1 34,433

#### Silk

(A Year's Production of Raw Silk in Lbs.) China, 13,545,000; Italy, 12,753,000; Japan, 12,725,000; Asia Minor, 3,061,000; India, 2,630,000; Tonking, 1,651,-181; France, 1,380,000; Balkan States, 1,200,000.

#### Wool

(A Year's Production in Lbs.)

Australia, 616,252,000; Argentina, 420,000,000; Russia and Siberia, 360,000,600; United States, 311,138,000; New Zealand, 175,752,000; United Kingdom, 134,000,000.

(A Year's Exports of Manufactured Woolens.)
United Kingdom, \$141,850,000; Germany, \$71,370,000;
France, \$62,575,000; Austria-Hungary, \$15,780,000; Belgium, \$14,245,000.

Cotton

(A Year's Production of Raw Cotton in Lbs.) United States, 5,886,093,107; India, 1,600,340,000; Egypt, 716,593,964; China, 225,000,000; Brazil, 98,175,000; Chief Manufacturing Countries and Manufacturing Countries Chief Manufacturing Countries—Number of Spindles
United Kingdom, 54,000,000; United States, 24,000,000;
Germany, 9,000,000; Russia, 8,000,000; France, 6,000,000;

India, 5,800,000.

Timber (Wrought and Unwrought-a Year's Export)

United States, \$69,735,000; Austria-Hungary, \$69,-000,000; Sweden, \$63,220,000; Russia, \$60,500,000; Canada, \$41,005,960; Finland, \$25,000,000; Norway, \$20,085,000.

Coal

(A Year's Production in Tons)

United States, 428,895,914; United Kingdom, 267,830,-962; Germany, 211,081,995; France, 36,753,627; Austria-Hungary, 28,710,102; Belgium, 23,569,000; Russia, 21,368,-000; Japan, 12,709,346; India, 11,147,339; Canada, 10,733,275; Australia, 9,681,044; China, 8,889,843.

Petroleum

(A Year's Production in Thousands of Gallons)

United States, 6,976,000; Russia, 2,598,000; Dutch E. Indies, 365,400; Austria, 348,600; Roumania, 340,200; India, 206,200; Mexico, 147,000; Japan, 65,000.

Gold

(A Year's Production: Value in Dollars)

Transvaal, \$158,865,000; United States, \$92,926,265; Australia, \$65,537,070; Russia, \$28,761,780; Mexico, \$19,043,-590; Rhodesia, \$12,840,990; India, \$10,668,455; New Zealand, \$10,508,935; Canada, \$9,481,590; Gold Coast, \$5,654,-

Silver (A Year's Production; Value in Dollars)

Mexico, \$50,567,095; United States, \$38,328,590; Canada, \$8,560,590; Germany, \$8,481,520; Peru, \$6,149,755; Australia, \$4,253,595; Bolivia, \$2,800,000; Japan, \$2,160,000; Spain, \$2,000,000.

Diamonds

(A Year's Production; Value in Dollars)

Cape of Good Hope, \$20,685,830; Transvaal, \$8,965,595; Orange F. State, \$5,741,290; German S. W. Africa, \$5,292,-465; Brazil, \$500,000; S. Rhodesia, \$51,750; British Guiana, \$30.515.

Iron

(A Year's Production of Pig Iron in Tons)

United States, \$25,781,361; Germany, 12,671,731; United Kingdom, 10,114,281; France, 3,590,200; Russia, 2,768,190; Belgium, 1,363,075; Austria-Hungary, 993,892; Canada, 676,031; Sweden, 615,778.

Steel

(A Year's Production in Tons)

United States, 23,955,000; Germany, 11,860,000; United Kingdom, 5,882,000; France, 2,967,000; Russia, 2,432,000; Austria-Hungary, 1,939,000; Pelgium, 1,348,000.

Copper (A Year's Production in Tons)

United States, 493,476; Mexico, 61,000; Spain and Portugal, 52,188; Japan, 42,310; Chile, 42,043; Australfa, 34,339; Germany, 32,298; Canada, 28,733.

Tin

(A Year's Production in Tons) Federated Malay States, 58,856; Bolivia, 29,937; Dutch E. Indies, 15,807; Australia, 12,755; United Kingdom, 5,052; Siam, 3,000.

Estimated Numbers Speaking the Principal Languages of Commerce

Portuguese, 15,000,000; Italian, 34,000,000; Spanish, 46,500,000; French, 52,100,000; German, 84,200,000; Russian, 85,000,000; English, 144,500,000.

### Trade of United States with Japan

Trade of the United States with Japan in 1918 has shown a tremendous gain, especially on the export side. A compilation by The National City Bank of New York shows that the value of merchandise exported from the United States to Japan and its leased territory in China aggregated for the year about \$250,000,000, against \$134,-000,000 in the fiscal year 1917. To Japan proper the total for the ten months ending with October, 1918, is \$223,000,000 against \$126,000,000 in the same months of 1917, and only \$81,000,000 in the corresponding months of 1916, while to Japanese leased territory in China the total for the ten months of 1918 is \$5,780,000 against \$3,624,000 in the same months of 1917, and \$922,000 in the corresponding months



#### Imports Increase \$15,000,000

This new trade with Japan's leased territory in China is especially interesting, showing as it does a very large increase in both imports and exports, and representing food products drawn from that territory and manufactures sent to that area. The value of merchandise imported from Japanese China in the ten months ending with October is, in round terms, \$25,000,000 against slightly less than \$10,000,000 in the same months of 1917, and a little over \$1,000,000 in the corresponding months of 1916, and represents chiefly soya bean oil, while merchandise sent to that area, amounting to nearly \$6,000,000 in the ten months of 1918, against less than \$1,000,000 in 1916, consists of various manufactures, but especially boots and shoes, and certain lines of machinery. In men's boots and shoes alone the value of shipments to Japanese territory in China was, in the ten months ending with October, 1918, nearly \$2,000,000 against practically nothing in the corresponding period of the preceding year, and the quantity of soya bean oil imported from Japanese China \$20,285,000 against \$9,314,000 in the same months of 1917, and \$1,381,000 in the corresponding months of 1916.

In the trade with Japan proper the growth occurs almost exclusively in raw cotton and manufactures of iron and steel. In raw cotton alone the total exports to Japan in the ten months ending with October, 1918, were \$71,782,-000 against \$25,936,000 in the same months of 1917. Steel sheets show a total for the ten months of \$10,098,000 against \$2,980,000 in the same months of 1917, and tinplate in the ten months of the current year \$10,205,000 against \$3,320,000 in the corresponding months of 1917. Steel rails, structural steel, cast and wrought iron pipes, wire sewing machines, metal working machinery and wire nails also show large increases in the 1918 movements to Japan, as compared with the corresponding months of the preceding year, while leaf tobacco, lumber, printing paper and spelter also show marked increases. On the import side, the chief articles drawn from Japan are raw silk, \$128,000,000 against \$125,000,000 in the same months of 1917; silk fabrics a little over \$9,000,000 against sabout the same value in the corresponding months of 1917; tea, 9,526,00 in value against \$6,767,000 in the same months of 1917, and soya bean oil from Japan proper \$7,270,000 against \$4,560,000 in the same months of 1917. and from Japanese leased territory in China \$20,285,000. The quantity of soya bean oil imported from Japan proper in the ten months ending with October is 65,000,000 lbs., but from Japanese territory in China 180,000,000 lbs., while two years ago the quantity brought from Japanese territory in China.

## Reliable Firms

are invited to correspond with us for the purpose of making new trade connections

Coast Steel & Machinery Co. PORTLAND, OREGON

## Exports of Merchandise from the United States to Japan, in the Ten Months Ending October, 1916, 1917 and 1918

	1916	1917	1918
EXPORTS TO JAPAN PROPER			
Dyes and dyestuffs	\$ 214,545	\$ 844,769	\$3,858,358
Extracts for tanning	126,060	4,043	600
Cotton, unmanufactured.	34,176,529	25,935,528	71,782,498
Glass, common window	342,065	40,006	32,920
Machinery, metal working	645,150	1,017,910	3,247,899
Sewing	187,167	339,837	880,202
Wire nails	1,390,107	779,241	2,006,261
Pipe and fittings, cast	273,757	365,415	941,683
Wrought	589,741	2,200,826	3,156,690
Steel rails	69,373	2,667,612	4,976,970
Galvanized sheets	164,806	541,608	491,249
Steel plates	3,033,577	28,040,096	13,545,108
Steel sheets	199,701	2,979,637	10,098,119
Structural Material	894,241	2,096,642	3,134,242
Tin plates	2,203,554	3,319,913 22,286	10,205,500
Wire, barbed	662,920	22,286	22,538
All other	1,419,291	2,189,268	3,520,389
Lead pigs	285,976	14,150	35,988
Leather, sole	1,311,618	774,437	287,852
Goat and kid	177,544	1,300,313	406,115
Boots and Shoes, Men's	No Data	No Data	253,083
Milk, Condensed and			
Evaporated	338,907	548,549	494,117
Rosin	573,345	461,279	639,908
Nickel	65,732	106,649	867,984
Oil, Illuminating	2,005,396	966,486	1,216,820
Lubricating	588,832	675,287	2,162,047
Printing paper (except	246 024	060.052	1 000 120
News Print)	246,934	262,853	1,009,129
Paraffin	707,644	254,319	782,984
Leaf tobacco	386,477	421,407	1,347,218
Lumber, fir boards	171,824	457,187	883,377
Spelter	57,011	No Data	353,698
EXPORTS TO JAPAN- ESE CHINA			
Steel rails	193,119	20,025	44,406
Boots, and Shoes, Men's.	No Data	No Data	1,911,014
<b>EXPORTS TO CHOSEN</b>			,,
Oil, illuminating	No Data	No Data	489,807
,w	are wata	1,0 2 414	,,

#### Foreign Commerce for 13 Years

Calen-			IMPORTS		
dar Years	Europe	North America	South Am <b>er</b> ica	Asia and Oceania	Total
_	Dollars	Dollars	Dollars	Dollars	Dollars
1906	700,067,050	240,709,681	147,941,781	219,331,415	1,320,501,572
1907	736,948,340	267,024,760	147,680,943		1,423,169,820
1908	548,882,652	224,623,181	132,431,434		1,116,374,087
	763,617,523		193,202,131		1,475,520,724
		324,212,684	189,466,428		1,562,904,151
		296,361,256	187,514,969		1,532,359,160
	900,003,944		233,731,935		1,818,073,055
		389,814,744	198,259,005		1,792,596,480
	783,517,509		229,520,375		1,789,276,001
	546,352,567		322,282,189		1,778,596,695
1916	633,316,911	658,438,095	427,609,562		2,391,635,335
	551,144,599		598,818,532		2,952,467,955
1918	318,127,305	967,400,347	609,371.205	1,041,899,402	3,031,304,721

Calen-			EXPORTS		
dar Years	Europe	North America	South America	Asia and Oceania	Total
	Dollars	Dollars	Dollars	Dollars	Dollars
1906	1,246,573,163	325,886,319	78.829.379	128,591,905	1,798,243,434
51907	1,313,067,256	362,189,112			1,923,426,205
1908	1,233,974,092	294,002,660			1,752,835,447
1909	1,169,672,726	344,761,296			1,728,198,645
1910	1,194,062,988	425,976,553			1,866,258,904
1012	1,293,072,862	482,438,006			2,092,526,746
1913	1,467,451,834 1,499,573,363	601 176 150	146 514 635	207.825.327	2,399,217,993 2,484,018,292
1914	1,339,295,916	481 588 221	91.013.339	176,402,751	2,113,624,050
1915	2,573,408,120	558.803.012	144,128,681	241,185,800	3,554,670,847
1916	3,813,274,495	924 537 277	220.281.584	470,481,930	5,482,641,101
1917	4,061,728,923	1.261.703.532	311,893,023	546,803,463	6,233,512,597
1918	3,858,705,905	1,325,582,571	302,840,975	603,063,877	0,149,392.647

## Products of the Western States

In creating this department dealing with the products of the three great western states of Washington, Oregon and California, it is necessary at the outset to direct attention to one important feature. The extent to which the products figure in the commerce of each state is shown, in most cases, by compilations which have not been brought forward of 1917. However, the importance of the information does not rest as much upon the periods represented as it does to show what may be considered typical of the average yearly production. In this latter respect the totals set forth accomplish what is an up to the minute survey of the products which contribute so vitally to the opulency of these great states whose western boundaries are washed by the Pacific Ocean,

#### State of Washington

Washington's great wheat crop is raised chiefly in Eastern Washington in 11 closely grouped counties within an area almost completely encircled by river systems. The largest of these rivers is the Columbia. This wheat producing center is comprised of the counties of Adams, Columbia, Douglas, Franklin, Garfield, Grant, Lincoln, Whitman, Walla Walla and Spokane, each of which has an annual output in excess of a million bushels. Whitman and Lincoln share as the leading producers, the 1917 harvest in each amounting to more than 5,000,000 bushels. The barley crop, of which the state is noted as being the third largest producer in the United States, comes principally from within the wheat area, Columbia, Garfield, Lincoln and Whitman leading all other counties. The oat-producing lands spread over a much larger area, and here we find Skajit county, in the Puget Sound district, surpassing all other counties save Whitman. Both have a yearly yield exceeding 2,000,000 bushels. Corn is grown with greatest success in Chelan and Yakima, both Eastern Washington counties bordering on the Cascade's eastern slope. Potatoes are common to all parts of the state, the Yakima potato, known far and wide, excelling with an annual production of 2.159,300 bushels. King county has a potato crop of over 800,000 bushels.

#### Principal Farm Crops

Corn	
Product	ion Total Farm
Acreage. (Bushe)	ls.) Value.
1916 38,000 1,406,0	000 \$ 1,406,000
1917 41,000 1,517,0	2,458,000
Wheat	
1916	000 53.818.000
1917	
Oats	33,513,513
	20200
1916 275,000 14,300,	
1917 292,000 11,242,0	9,106,000
Barley	
1916 165,000 6,814,0	000 5,724,000
1917 170,000 4,930,	000 5,670,000
Rye	• •
1916 7,000 102,	000 113,000
1917 7,000 89,	000 156,000
Potatoes	
1916 60.000 9,900.	000 9,702,000
1917 79,000 9,875.	
•••	
10.1	
1916 836,000 2,006,	
1917 808,000 1,778,	000 35,560,000

#### Dairy Products

Just as the country lying east of the mountains leads the rest of the state as a grain-producing center, those counties west of the Cascades constitute the great dairying region of Washington. Spokane county is the one exception. Dairy farms flourishing in King County sup-

port 13 large creameries, supply the milk that enters into the product of one of the world's greatest condenseries, and in 1917 brought a return of \$3,873,634.78 in butter and milk retailed. Of the butter manufactured in King county creameries in the same year, 1,670,140 pounds was exported. There are six creameries in Snohomish county. in the Puget Sound district, and six in Spokane, Eastern Washington. The total number of creameries throughout the state was 111 in 1917. The cheese-making industry is carried on principally in Clarke, Jefferson, Pacific, and Whatcom counties, all in Western Washington. The manufacture of condensed milk is an important factor in the export trade, and during the same period, of the 1,844,097 cases produced by the various condenseries, 1,427,949 were exported. Over 205,657,654 pounds of milk were consumed by this industry.

ware combanies by this manday.	1916.	1917
Condensed milk	\$6,252,893.00	\$8,870,825.00
Cheese	198,031.00	348,669.48
Butter	5,833,818.26	6,499,606.43
Milk retailed	3,744,800.63	3,458,665.51
Sweet cream retailed	3,355,247.30	1,035,809.69

#### Washington Fruit

Yakima and Wenatchee apples, which need no introduction in any part of the United States, are the product of valleys of the same name which comprise the richest fruit-producing area in the state. Fruit-bearing trees of every variety known to the state, with the exception of apricots, thrive under the highly favorable irrigation methods employed in Yakima county. There are 1,198,000 apple trees in the Yakima orchards, 151,008 pear trees, 234,480 peach trees, 34,750 plum and prune trees, and 6,750 cherry trees. Spokane has 1,066,700 trees, but 533,300 of these are five years or younger and have not yet come into these are five years or younger and have not yet come into bearing. Less than 500 trees in the Yakima district are non-bearing, according to the census taken by the State Horticulturist. Klickitat county, on the Columbia river, and also east of the mountains, grows 425,680 apple trees under dry farming conditions. Most of these are in bearing. The third largest apple district is found in Benton county, in the same section. The Benton orchards contain 456,000 trees. Berries and soft fruits, of which strawberries are by far the most important, are grown extensively in the Western Washington districts. Vashon Island strawberries, from a section of King county, are probably the best known. According to the nature of the smaller fruits they are mostly raised for local consumption. Berry fields in the Puyallup district, in Pierce county, cover a vast area and are mostly of the bush variety. They not only supply the local demands, but great quantities are preserved by the several large cantaries in that vicinity. neries in that vicinity. Apples Production

1916 1917	(Bushels.) . 14,858,000 . 17,897,000	Value. \$11,906,400 22,371,250
Pears 1916 1917		523,450 684,250
Peaches 1916		398,400 504,000

Commercial Shipments of Vegetables

Commercial shipments of vegetables take in many varieties, with potatoes leading in volume. The principal shipments include, besides potatoes, onions, egg plant, cab-bage, cucumbers, celery, rhubarb, carrots and green corn, and smaller quantities of nuts, casabas, asparagus, ruta-bagas and turnips. The following figures for 1915 repre-sent the number of standard size packages.

Potatoes											 							716,735
Onions											 							189,930
Egg Plant											 							7,160
Cabbage .					 						 					 		38,860
Cucumbers					 	•	•							•	•	 		33,475

Celery 9,300
Rhubarb
Carrots
Green Corn
Other vegetables
Mixed vegetables
Nuts
Casabas 900
Asparagus
Rutabagas, Turnips

#### Fruit and Vegetable By-Products

Over 34 million pounds of fresh fruits and vegetables, or, to be more exact, 34,496,517 pounds, were used in byproducts during the year 1915. Apples and prunes were in chief use as by-products, there being consumed 8,723,289 pounds of apples, and 16,306,110 pounds of prunes. Clark county in South-Western Washington is the greatest prune producer, contributing 15,750,000 pounds of the total noted above. The fruits and vegetables used, and the quantities in pounds, were as follows:

quantition in pounta, more as assessed	
Apples	8,723,289
Pears	591.60 <b>7</b>
Peaches	235,290
Cherries	632,238
Cheffies	
Grapes	30,102
Apricots	251.835
Strawberries	286,933
Blackberries	3,299,950
D 1 1	
Raspberries	Z,344,003
Other berries	1.729.523
Beans	217,255
Squash	218.926
Cucumbers	1,580,000
Cabbage	2.330.242
Quince	2,154
Prunes	
Tomatoes	3.717.000
20112000	J, ,000

#### Livestock

Climatic conditions of the state are extremely favorable to the raising of livestock, principally beef cattle, sheep and hogs, and milch cows. Probably the largest bands of sheep are to be found in the Eastern Washington districts, notably in the Yakima valley district. In this vicinity the bands of sheep pasture in the foothills during the summer, and when winter settles over the district they are taken to the warmer lowlands. Sheep raising is also carried on to a considerable extent in the San Juan Islands, in Western Washington. Horses and mules thrive in any part of the state. In 1914 there were a total of 11 large slaughtering and packing establishments operating in Washington, and many of the large national packing companies have branches within the state. Livestock on farms in 1917 and 1918 were as follows:

	Horses	. 5.	** .	
	Number.	Av. Price.	Value.	
1917	300,000	\$ 98.00	\$29,400,000	
1918		108.00	33.372.000	
	Mules	200.00	00,0.00	
1917		111.00	2,109,000	
1918	19,000	117.00	2,223,000	
	Cattle			
	(Milch Cow	/s.)		
1917	263,000	59.50	15,648,000	
	266 000			
1918		70.00	18,620,000	
	Other Cattle			
1917	275,000	30.40	8.360.000	
1918	294,000	36.00	10,584,000	
17.0		00.00	10,001,000	
	Sheep			
1917		7.10	4,154,000	
1918		11.40	7,535,000	
1910		11.40	7,555,000	
	Hogs			
1917	283,000	11.20	3.141.000	
1918	283,000	20.00	5,660,000	
1710	283,000	20.00	3,000,000	
Fishing Industry				

Fishing Industry

The fishing industry in Washington occupies an important place. Salmon and halibut represent about 75 per cent

of the returns derived from this industry. Large fish companies operate boats and traps, and maintain a number of canneries. The industry also furnishes a livelihood to great numbers of individual fishermen. Salmon packs and fresh salmon yielded over \$2,000,000 in the 1915-16 season. Crabs, shrimps, clams and oysters constitute the balance of the major catches. The principal oyster beds are maintained in the vicinity of Olympia, the state capital. Dungeness crabs come from the traps located at Dungeness, Washington, and thereabouts, and are the best known of the other shell foods. The byproducts of the fishing industry include oil, fertilizer, sizing, and fish meal. The following totals are for the year ending March 31, 1915, and the year ending November 30, 1916:

year ending March 31, 1915, and	the year	ending Novem-		
ber 30, 1916: Salmon		Value.		
1915—Pounds		\$ 692,978.76		
1916—Pounds	11.841.820	1.220.965.88		
1915—Pack, cases	1,306,241	6,029,892.78		
1916—Pack, cases	1,097,411	5,269,504.60		
Clams				
1915—Canned, cases	42,592	157,764.80		
1916—Canned, cases				
1915—Fresh, sacks	2,100			
1916Fresh, pounds	1,245,330	43,586.76		
Oysters				
1915-Native, sacks	114,053	822,433.40		
1916-Native, sacks	29,337	211,030.35		
1915—Eastern, boxes	11,224	78,175,90		
1916—Eastern, sacks	10,111			
Crabs				
	88,561	52.615.52		
1915—Dozen				
1916—Pounds	1,543,694	123,495.52		
Shrimps				
1915—Pounds	183,122	9,156.11		
1916—Pounds	105,167	15,775.05		

#### Minerals

Washington's annual coal output has averaged 3,000,000 short tons for the 16 years ending with 1916. This industry began with an output of 5,374 tons in 1860, and with few exceptions, the production has increased steadily year by year. The vast coal deposits still contain infinite quantities, and it has been estimated that it will require more than 5,000 years to exhaust the supply. The majority of the coal fields are confined to Western Washington, although Kittitas County, in Eastern Washington, carried on the greatest development in 1916, increasing its output from 879,062 tons in 1915, to 1,316,993 tons in 1916. King county is the next greatest producer. Metal mining is practically in its infancy, and gold, copper, lead and zinc claims are being worked in many different parts of the state. Metals to the value of \$2,289,285 were extracted in 1916, and it is believed that under proper development the mineral wealth of the state has, illimitable growth ahead. The lead mines were pushed with the greatest vigor in the year before mentioned, the output increasing to the value of about \$500,000.

of about \$500,000.			Quantity.
	Coal		short tons.
1915			2.049.331
1915 1916			3,019,600
	Gold	Fine ounces	Value.
1916		27 944 06	\$557.655
1916 1917		23,816.17	492,324
	Silver		
1916		335.121	220,510
1917		282,320	232,631
	Copper	Pounds.	
1916		2.645.022	650.675
1917		2,199,518	600,468
	Lead		-
1916		5,399,274	372,550
1916 1917		9,788,687	841,914
Zir	ic-Conte	ent	
1916		1,693,734	226,960
1917	<b></b>	1,195,567	121,948

#### Lumber

For 11 years the great forests of Washington have held the state in first place as the greatest producer of rough lumber in the United States. The manufacture of lumber and shingles is the state's leading industry, the shingle output alone comprising about three-fifths of that consumed in the United States. Washington has the largest shingle mills in the world. With one exception, the state also produces more laths than are manufactured anywhere else in the country. In 1914 there were 821 industries engaged in the manufacture of lumber and timber products, and 91 establishments turning out planing-mill products, exclusive of the planing mills connected with the mills. The output of the mills represented about 35 per cent of the total manufactures of the state. Douglas fir constitutes about 80 per cent of the annual timber production. The other principal species cut are Western hemlock, Western red cedar, spruce, Western pine, larch, Idaho pine, white fir and Lodgepole pine. The greatest timber growth is confined to Western Washington, principally in the Olympic and Cascade mountains.

	Board ft. cut.	Value.
1915	3,950,000,000	\$41,814,078.00
1916	4,492,997,000	53,159,502.00

#### Products of Principal Manufacturing Industries

In 1914 there were a total of 3,829 establishments engaged in manufacturing, employing 78,448 persons. The capital represented by these various industries amounted to \$277,715.262, and the value of the products manufactured, at \$245,326,456. The principal of these industries and their manufactures appears below, but in passing it will be well to mention the lesser industries, which affords some idea of the varied character of manufactories at work within the state. There are manufactured within the state the following products: Agricultural implements, artificial limbs, artificial stones, automobile bodies and parts, awnings, tents and sails, belting leather, blank-books, boots and shoes, boxes and cartons (paper), brass and bronze, brooms (from corn broom), canned and preserved fish, canned and preserved fruits and vegetables, canned and preserved oysters, carpets, carriages, wagons, cars (steam and electric railroad), cement, chemicals, cleansing and polishing preparations, clothing, coffee and spice (roasting and grinding), cooperage and wooden goods, engines (steam, gas and water), food preparations, fur goods, gloves and mittens (leather), hosiery and knit goods, iron and steel forgings, jewelry, lime, marble and stone work, mattresses and spring beds, musical instruments, pickles, preserves, spices, rice (cleaning and polishing), slaughtering and meat packing, stoves (hot-air furnaces and ranges), tools, trunks and valises, wood turned and carved), woolen goods.

The products of the principal manufacturing industries in 1914, and the value of the products were as follows:

Nu	mber	Value of
Establish		Product.
Brick, tile and building brick	71	\$ 3,354,983
Butter, cheese, condensed milk	101	11,807,897
Canning and preserving fish	48	7,634,076
	112	1,619,870
	100	23,665,382
	190	5,975,823
	165	4,425,128
Furniture	50	1,097,990
Wood, other rattan and willow	29	811.144
Ice, manufactured	32	551,429
	821	78,130,004
Lumber, planing mill products	91	4,595,765
Mineral and soda waters	63	513,478
Patent medicines, compounds	28	199,678
Saddlery, harness	33	562,771
Shipbuilding	64	*3.101,446
	115	563,246

<sup>\*</sup>The impetus given the shipbuilding industry by war orders will greatly increase this sum, so these figures cannot be taken as a general average.

#### State of California

#### Agriculture

The acreage devoted to other crops	in 1917,	as com-
pared to 1916, was as follows:	1916.	1917.
Hops	8.391	9,967
Celery		2,300
Beans	157,825	453,195
Standing Alfalfa	487,134	1,007,554
Cotton	15,000	91,585
Sugar beets		140,138
Rice		90,720

Besides this increase of acreage of the staple crops, California had vines and fruit trees as follows, bearing and not bearing:

Table grapes		87,807
Raisin grapes	128,217	134,428
Wine grapes	160,573	165,669

#### Citrus Fruit

The season of 1916-17 was the year of the heaviest shipments from California as a whole and a year of good prices. The total movement of citrus fruits as produced in California, shipped both eastbound and locally, amounted to the record figure of 54,361 cars. The value of the 1916-17 fruit crop amounted to \$45,000,000. Grape-fruit, or more properly pomelos, are a material factor in the citrus culture of the state, but statistics regarding their production are usually included in the orange figures. The greatest orange crops are raised in Southern California. The shipments of citrus fruits from California in 1916-17, as compared to 1915-16, were as follows:

	Cars	Oranges.	Lemons.
			7,200 7,914
1310-17		40,447	7,714

#### Lemon Production

The young non-bearing acreage in California is almost as great as the present bearing acreage, and when this comes into full bearing California alone will produce more lemons than the United States and Canada now consume. The latest available acreage figures follow:

Present bearing acreage	21,946
Present non-bearing acreage	18.573
Total lemon acreage	
Present normal yield(carloads)	8,000
Present normal imports(carloads)	6.000

#### Deciduous Fruit

The total production in 1917 can only be approximated. The three leading railroads report shipments of 24,425 carloads. In the table below the figures are for actual carloads, without regard to the number of tons in a car. The minimum fixed by the railway companies is 13 tons to a carload, but a carload is often 30 tons.

	Actual	Carloads	1916.	1917.
Apricots			2891/2	403
Cherries			164	330
Grapes			9,722	13,746
Peaches			1,9091/2	2,432
Pears			3,701	4,798
Plums			1,9981/2	2.651
Sundry	• • • • • •		1061/2	65

#### Apples

It is shown by the report of the State Horticultural Commission that there are 39,602 bearing and 22,950 non-bearing apple trees in the state. Statistics from the

United States Department of Agriculture show the total production of the state to be 5,592,000 bushels. The estimated dried apple output for 1917 amounted to 8,000 tons. Pajaro Valley is the most important apple producing section of the state, and in 1917, 1,409 carloads of one thousand boxes each were shipped from that district to various parts of the state, and 579 cars approximating 800 boxes to a car, were shipped outside of the state. The Gold to a car, were shipped outside of the state. The Gold Ridge or Sebastopol District specializes on Gravensteins, to which, probably, three-fourths of the non-bearing acreage is planted. This apple is peculiarly adapted to this section and is ready for shipment from six weeks to two months earlier than the same variety produced in other sections of the United States and Canada. Shipments in 1917 were as follows:

Green apples.......550 cars or 330,000 boxes Dried apples......3,200 tons

#### The Avocado

While the raising of avocados (alligator pear) is still While the raising of avocados (alligator pear) is still in its infancy, it promises to become a popular industry in the state. According to the report of the California Avocado Association there are approximately 25,000 budded trees in California planted in orchard form. Of this number probably 15,000 are of what would be considered first class marketable varieties. The better known trees in the vicinity of Los Angeles bear from 400 to as trees in the vicinity of Los Angeles bear from 400 to as high as 2,000 fruits each, which, when sold at the current prices of 50c and \$1.00 each, give a handsome income. At the present advanced prices an income of \$200 per tree would be considered ordinary. The seed has been chiefly imported from Mexico, but native grown seed is rapidly increasing, which is offsetting conditions which have recently rendered the importation of seed impossible.

#### Dates

In the ten years in which the date crop has been raised in the Coachella Valley there has never been a crop failure. the fruit ripening to perfection and carrying a sugar content of from 50 per cent to 70 per cent, which insures its keeping indefinitely. There are now grown in Coachella Valley about 40,000 imported palms and nearly one million seedlings. About 100,000 pedigreed date seeds were planted in 1918. The Deglet Noor palms often produce from 100 to 150 pounds per acre, and the quality of the fruit and its sugar content surpasses the same variety grown in its original home in the oases of the Sahara.

Imperial Valley is second in importance in this indus-y. There are now grown in Imperial Valley 1,000 imported palms, and there are about 26,550 seedlings, of which about 1,090 are in bearing.

#### Grapes, Raisins and Wine

The principal localities in the state from which table grapes are shipped are the counties of Sacramento, Placer, El Dorado, San Joaquin, Merced, Madera, Stanislaus, Fresno, Kings, Tulare, San Diego and Imperial. During the season of 1917, 16,564 cars of grapes were shipped to points outside the state. The shipments were classified as follows:

Table grapes in crated form, 12,114 cars.

Table grapes in drums and kegs packed in redwood sawdust, 450 cars.

Wine grapes in refrigerator and box cars, 4,000 cars.

The total bulk of table grapes produced in the state in 1917 and shipped as such variety was 174.514 tons, representing a total selling figure of \$17,500,000.

The crop of raisins produced in California is tremend-is. In 1917 it exceeded the normal production about ous. In 1917 it exceeded the normal production about 30,000 tons and the best estimate of the entire raisin production aggregated 163,000 tons. The output reached the aggregate selling figure of about \$25,000,000, and California supplies practically the entire raisin consumption in the United States. Fresno, Kings and Tulare counties raise the greatest crops, with Fresno yielding a total of 123,750 tons, including all varieties.

#### Wines and Brandy

The total production of wine in the state for the vintage season of 1917 was approximately 36,600,000 gallons. This production was less than the production of 1916 by about

5,500,000 gallons. The shortage was in both the sweet and dry types of wine. Sweet wines fell short of the 1916 production by over 2,500,000 gallons and the dry wine output was less by 3,000,000 gallons. The totals for 1916 and 1917 were:

Gallons	1916.	1917
Dry wines	23,000,000	3,027,892
Brandy	20,020,000	5,042,836
Sweet wines	. 19,262,474	16,585,508

To produce this quantity of sweet wine it required the crushing of approximately 200,000 tons of grapes. The grapes required to produce brandy for commercial purposes used prior to the suspension of such production on October 4, 1917, totaled 34,500 tons. About 148,000 tons

of grapes were used to produce the dry wines.

In 1917 the shipment of wine out of California by sea in bulk amounted to 2,091,951 gallons valued at \$980,615. With the exception of England and Denmark, all of this wine went to points in South and Central America, or

countries bordering on the Pacific.

The 1917 almond crop amounted to about 4,000 tons, which was by far the heaviest tonnage of almonds produced in California. The crop per acre was exceedingly light in most sections, several districts reporting a complete failure. The increase in tonnage is due to the many acres of young orchards now coming into bearing. fornia produces all of the almonds grown commercially in the United States.

	Tons 1916.	1917.
Almonds		4,000
Walnuts		15,000

The production of so-called English walnuts particularly or so-called English walnuts particularly in the counties of Santa Barbara, Ventura, Los Angeles, Orange and Riverside, has become one of the important industries of the state. The output of the crop of unshelled walnuts has increased from 15,096,887 pounds in 1907, to 30,810,000 pounds in 1917. Five years ago California shelled walnuts were an unknown product. It has only been through the recent development and perfection of mechanical appliances for shelling the walnuts that 1,500,000 pounds of shelled walnuts were shipped from the state in the 1917 season.

#### Olive Industry

Olive culture is one of the oldest fruit industries in California. The first grove was planted in San Diego in 1769, and that county is still a large producer of olives and olive oil. Each year shows increased plantings, there now being 37 counties, ranging from San Diego in the south to Shasta in the north, in which there are more than 1,000 trees. The number of trees in the spring of 1917 were 816,302 bearing and 482,208 non-bearing. Among the largest olive groves is that of Sylmar (near Los Angeles) with 1,200 acres under one management, and a 2,000-acre tract near Porterville. The three largest ripe olive packing plants in the world are located in Butte county.

Next to raisins, prunes are most important in the list of dried fruits. While they are grown commercially in about one-half of the counties, Santa Clara and Sonoma counties lead in production. Santa Clara has about 5,633,-900 bearing trees, and 467,000 non-bearing trees, and Sonoma county, 395,570 bearing, and 540,180 non-bearing trees. The value of the 1917 crop is roughly estimated at \$10,000,000. In 1916 the total production was 78,000 tons, and in 1917, 109,000 tons.

Output of Cured Fruits: 7	Cons
	1916. 1917.
Apples	4,500 8,000
Apricots	11.000 16.000
Figs	9,000 8,600
Peaches	30,000 38,000
Prunes	
Raisins	
Sundry	3,000 4,000



Vegetable Crops, 1917	Value.
Beans, bags 4,802,000	\$37,712,800
Sugar beets, tons	10,000,000
Onions, bags	2,600,000
Potatoes, Irish, bushels15,225,000	22,838,000
Potatoes, sweet, crates	1,500,000

#### Field Crops: Grain Crops

The acreage devoted to grain (with the exception of barley) has been rapidly falling off year by year for the reason that the large ranches formerly devoted exclusively to grain have been rapidly subdivided and planted to more profitable crops. California is the leading barley producing state in the Union with the production in 1917 of 39, 150,000 bushels. This exceeds the next highest state production by 1,350,000 bushels. Wheat follows with 7,425,000 bushels. Oats is the third grain in importance with 6,860,000 bushels, and corn fourth, with 400,000 bushels.

B	ushels	1916.	1917.
Wheat (60 lbs.)		5.600.000	7,425,000
Barley (48 lbs.)			39,150,000
Corn (56 lbs)			2,400,000
Oats (32 lbs.)	<b></b>	6,500,000	6,860,000
Rye (60 lbs.)			

Wheat, formerly the most important agricultural product of the state, has gradually given place to barley. This is due to the fact that the malting qualities of California barley give it a ready market abroad. Oats are raised, in some parts of the state, more for hay than threshing, while corn is but little used as feed for work animals. Barley has long been the main grain feed, but of late years oats have come into use to quite an extent. The San Francisco Chamber of Commerce reports that 54,643 centals of wheat, 890,782 centals of barley, 59,080 centals of oats, 22,843 centals of corn and 635,273 barrels of flour were exported by water from San Francisco in 1917.

#### Hay and Forage

The hay crop of California is one of its most valuable agricultural products. The census returns for the crop of 1909, a fair year, gave the yield at 4,327,130 tons, valued at \$42,187,215. The total acreage sown to hay amounted to 2,400,000 acres in 1917, as compared with 4,375,000 in 1916. California grain cut in the milk is highly prized for hay and is sent East by the trainload for feeding race horses. Dairying and hog-raising in connection with alfalfa growing is becoming one of the leading industries of the state on account of the small initial capital required. There were 1,007,554 acres of standing alfalfa in 1917, and the production totaled 2,237,000 tons. The acreage is steadily increasing and five cuttings may be made yearly on irrigated land, with an average of six tons per acre.

#### Beet Sugar

The beet sugar industry in the United States originated in California at Alvarado in Alameda county. There were 154,700 acres of beets planted in 1917 and 1,318,400 short tons of beets harvested. Sugar contents of beets grown in California is greater than in any other state, having 15.18 per cent. The production of beet sugar in 1917 was reported as reaching 4,157,181 bags of 100 pounds each, and the estimated value was \$29,308,126. The leading beet sugar counties are Orange, 26,000 acres; Monterey, 22,000; San Joaquin, 15,000; Ventura, 13,500; San Luis Obispo, 10,000. There are 14 large beet sugar factories in the state, four of them operating in Orange county.

#### Rice

Among the potential crops of the state none has advanced with such sturdiness as rice. In 1909, through efforts of the Sacramento Valley Development Association, the attention of the United States Department of Agriculture was directed to the prospective adaptability of the soils of the great interior valleys to rice culture. A small experimental farm produced splendid samples and for a period of three years ever increasing and more favorable results were achieved by the government and private parties, until, in 1912, there was planted in the aggregate 1,200 acres, giving a yield of 3,500,000 pounds,

with a market value of approximately \$75,000. In 1917 the acreage was about 85,000, yielding an average in excess of 30 sacks of 100 pounds each to the acre, with a monetary value of \$11,000,000. Efforts are being made to produce earlier maturing varieties—varieties that may be harvested before the early rains that are apt to occur in the first days of December. It is believed that one new rice, imported from Japan, will ripen at least 30 days ahead of the regular season, and about 8,000 acres have been planted in the Glenn and Butte sections to this variety. There are also some of the more fancy brands being tried out. Twelve large rice mills have sprung up as a result of the successful cultivation.

#### Fibres: Cotton

The growing of cotton in California is not a new industry so far as Imperial Valley is concerned, but the movement commenced at Fresno. It is believed by cotton experts that the San Joaquin and Sacramento Valleys have the lands and climatic conditions that will place cotton in the same category as rice. An authority on crop production states that San Joaquin Valley within the next five years will be producing \$10,000,000 worth of cotton. There were 117,000 acres planted to cotton for the season of 1917. This is more than double the acreage of 1916, which amounted to 52,000 acres, while that of 1915 was but 39,000 acres. Yield per acre for the 1917 season showed a decided decrease, the figures giving an average of 275 pounds per acre, compared to 400 pounds per acre in the year previous. While the yield per acre is diminishing, it is still higher than any other state. Louisiana ranks second with 218 pounds per acre. The total production for 1917 amounted to 67,000 bales as against 44,000 bales for 1916. The total farm value of the cotton crop was \$9,380,000, and in 1916, \$4,362,000.

#### Wool, Flax and Hemp

The state is credited with the production of 1,850,000 fleeces, at an average weight of 6.3 pounds each, making a total of 11,600,000 pounds for 1917. The crop was valued at \$5,475,200. The culture of flax and hemp has lately received an impetus in several localities which promises important developments. The soil in some places along the Sacramento and San Joaquin rivers is suitable for producing a fine quality of hemp. The hemp is manufactured into twine of various kinds in mills situated in the port of Oakland. California claims that its hemp is of a better quality than grown anywhere else in the world. When properly handled after harvesting, it produces from 1,500 to 1,800 pounds per acree of long, clean, silky fibre. It is one of the easiest of all crops to grow, requiring nothing except preparation of the soil and seeding, no cultivation being necessary. The harvesting is a simple matter and the machinery required for turning out a ton of fibre a day is not expensive and can be operated by two men.

#### Sill

Climatic conditions are admirably adapted to the raising of silk worms, although this industry has not yet been placed on a commercial basis. The season of production extends over a period of 6 or 8 months, while in Europe it lasts only as many weeks. Government authorities have made favorable reports on California silk, stating it was suitable for the manufacture of the finest fabrics and was not excelled by the European product.

#### Hop Industry

The hop acreage, as in other parts of the United States, varies greatly from year to year; if a partial failure of the crop elsewhere sends the price skyward, the following year brings large plantings. Under normal conditions the acreage is fairly consistent. The latest reports give the total acreage of hops in 1917 as 9,967, ten counties being listed. The principal fields are in the Sacramento Valley, where a failure has never been known and where the quality of the hops closely matches that of the New York and European varieties. The following table shows the extent of this industry:

	Bales.	Pounds.
1916	116,500	22,277,500
1917	85,000	15,300,000

## Brewing Industry

The number of breweries operating in the state is approximately 60, representing an investment aggregating \$50,000,000. In 1917 the breweries manufactured 1,542,000 barrels of beer, being an increase of 200,000 barrels over the preceding year. During this same period the breweries consumed 80,000,000 pounds of barley, 21,000,000 pounds of rice, and 1,079,000 pounds of hops.

#### Dairy Industry

Owing to the fact that alfalfa grows the year round, yielding from 9 to 10 tons per acre, California is becoming one of the leading dairy states in the Union. While the production of butter in 1917 showed a marked decrease, there was a corresponding increase in the production of cheese, the total output for 1917 amounting to 9,236,663 pounds as against 7,745,124 pounds for 1916. Santa Clara led all other counties with 1,567,305 pounds; Monterey was second with 1,336,727 pounds. The total value of the cheese output amounted to \$1,827,012. The total value of all dairy products in 1917 was \$48,235,107, and in 1916, \$40,310,105. The annual value of dairy products for 1916 and 1917 was:

I dulids and v	aruc	
Butter— 1916	Pounds	Value
1916	70,030,174	\$19,181,264
1917	68,373,021	25,345,879
Chcese		
1916	7,745,124	1,203,592
1917	9,236,663	1,827,012
Condensed, evaporated and pow-		
dered milk—		
1916	18,610,226	1,488,818
1917	25,631,560	2,771,654
Casein—		
1916	1,864,317	186,431
1917	3,603,750	540,562
	1916.	1917.
Market milk and ice cream	14,000,000	\$14,500,000
Calves produced on dairies	3,000,000	2,500,000
Skimmilk and Buttermilk	1,750,000	1,250,000

#### Goat Milk

California boasts of having the first and only evaporated goat milk plant in the world. The industry is less than two years old and today supplies goat milk in cans throughout the United States. The demand far exceeds the supply. The operating company owns the largest herd of goats in America—approximately 6,000 head.

#### Hogs

In a report issued February 1, 1918, there were 974,000 hogs in the state as against 994,000 at the same date in 1917; while the number had decreased materially, the value showed a marked increase due to advanced prices commanded.

Livestock

The following table shows the number and value of farm animals for the years of 1916 and 1917, as well as the average price for each period:

	Horses		
	Number. 468,000	Av. Price. \$ 97.00	Value. \$45,396,000
1916 1917	468,000	98.00	45,864,000
	Mules		
1916 1917	70,000 66,000	116.00 115.00	8,120,000 7,590,000
	Milch Cow	8	
1916 1917	591,000	67.00 72.50	39,597,000 43,282,000
	Other Cattl	e	
1916 1917	1,636,000 1,701,000	38.10 42.10	62,332,000 71,612,000
	Sheep		
1916 1917	2,524,000 2,776,000	6.70 11.30	16,911,000 31,369,000
	Hogs		
1916 1917	994,000 974,000	10.10 17.50	10,039,000 1 <b>7,</b> 045,000

## Honey

According to the thirteenth United States Census, California is the banner honey-producing state of the Union, the output being three times as great as her nearest competitor, Texas.

The total honey crop for the state for 1917 was 296 carloads, or a total of 8,900,000 pounds. Of this amount 280 carloads were extracted honey, and 16 carloads were comb honey, the aggregate value amounting to \$952,200. If the value of beeswax and queen-bees sold, were added to this figure, it would total \$1,000,000 of bee products for 1917. The great bulk of the commercial product comes from the southern counties and from the San Joaquin Valley. About four-fifths of the honey produced in the state is of first and second quality, being produced principally from the sages, alfalfa, oranges, wild buckwheat, wild alfalfa and other honey plants.

## Lumber Industry

It is estimated that the California forests contain about 109,000,000,000 feet of timber, largely pine, fir and cedar, having an estimated value of \$225,000,000. About 75,000,000 feet of this timber is cut annually to fill the normal demand. California Redwood leads in the lumber production. It produces 40 to 75 per cent of "clear lumber." The redwood (Sequoia sempervirens) is indigenous to California, and is found in no other part of the world. The wood takes a distinct and beautiful finish, which makes it valuable for interior use of all kinds. Being free from resin, it is especially resistant to fires and decay, making it especially valuable for siding, shingles and wherever exposed to moisture. The redwood belt extends from the California-Oregon line southerly along the coast about 240 miles, a narrow belt 10 to 30 miles wide; on the west is the Pacific Ocean and on the east the divide of the low Coast Range.

The annual shipments of redwood from the California mills north of San Francisco bay amounted to 406,340,000 feet in 1916, and 487,458,000 feet in 1917. To this cut may be added approximately 100,000,000 feet going into shingles, shakes, split ties, posts, pickets, etc., and at least 25,-000,000 feet manufactured south of San Francisco. The Sierra Nevada mountains are the home of the pine. The total area of merchantable pine timber is approximately 8,000 square miles. The most valuable trees are the sugar pine, the white pine, and the Jeffrey pine. Other valuable trees in these forests are Douglas fir, white fir, spruce, cedar and Western hemlock.

#### Mineral Industry

The following table shows the comparative values of the several more important minerals produced in California during the year 1916 and 1917:

	1916.	1917.
Borax	\$ 1,670,000	\$ 2,500,000
Brick and tile	1,600,000	2,000,000
Cement	6,100,000	6,000,000
Copper	17,000,000	15,000,000
Gold	22,500,000	21,000,000
Lead	1,000,000	2,000,000
Natural gas	1,800,000	3,000,000
Petroleum	49,000,000	73,000,000
Quicksilver	2,500,000	2,200,000
Silver	1,400,000	1,700,000
Stone, miscellaneous	5,100,000	4,000,000
Tungsten concentrates	4,000,000	3,000,000
Zinc	2,000,000	1,000,000
7751		4014

The total value of all minerals extracted in 1916 was \$119,065,400, and in 1917, the value increased to \$144,-239,000.

## Petroleum

The petroleum output shows an increase from over \$57,000,000 in 1916, to approximately \$73,000,000 in 1917. This is attributed to a number of causes. Production did not keep pace with the demand, and new developments were curtailed because of the Federal Government's suits in the Kern county fields. The yield during 1917 increased about 7,000,000 barrels, and the price per barrel averaged at least 25 per cent more than in 1916 The producing wells increased 7,333 in number. The amount of oil in



storage decreased from 57,147,051 barrels in January to 44,036,190 barrels in December. There were 90,262,557 barrels produced in 1916, and 97,267,832 produced in the year following. The number of fields in California is eleven.

Both the interior and the coastal waters of California abound in food and game fish. There are about 165 species of cold-water fauna whose proper home is north of Point Concepcion, and 117 species of semi-tropical fauna found south of Point Concepcion, beyond the reach of the cold currents of the north. Of these, 133 varieties of food fish are found in the San Francisco markets, including oysters and shell fish. Over-fishing and destruction of spawning beds through lumbering and placer mining has caused a steady decrease in the supply of salmon in the Sacramento basin. Re-stocking of the Sacramento river is proceeding and the number of salmon is again on the increase, but they are mostly marketed as fresh fish.

## State of Oregon

The vast potentialities of Oregon's agricultural industry may be best measured by comparing the present 5,000,000 acres under cultivation with the 16,000,000 acres of uncultivated tillable land, and the some 4,000,000 acres of logged-off and burned-over lands suitable for farming and pasturage. To this should be added the land being continually cleared off by the extensive timber operations carried on within the state.

Oregon is a semi-arid state, and while there is a bountiful rainfall in the river valley west of the Cascade mountains, the precipitation in the regions east of the mountains is extremely light, and necessitates the carrying on of great irrigation projects. There are about 3.500.000 acres of land susceptible to irrigation, with measured water facilities for the irrigation of at least 4,000,000 acres. Irrigation was begun in Oregon many years ago, but due to lack of sufficient aid from the Government, there has been brought under irrigation only about 1,000,000 acres. The larger projects are located in Eastern and Central Oregon, as far south as the California line. In the Willamette Valley, which is one of the most productive on the Pacific Coast, there are about 2,000,000 acres which may be irrigated for intensive farming purposes. Private interests have expended several millions of dollars in reclamation by irrigation. Outside the Willamette Valley, reclamation by drainage has been almost a negligible quantity, and there are several million acres of swamp and low lands susceptible to such development. The total water supply from the streams of Eastern and Central Oregon capable for utilization by irrigation is 6,677,000 acre-feet, an amount sufficient to bring under production 3,000,000 acres of rich desert land. The total acre-feet of water available for irrigation in Western Oregon is 2,360,000, sufficient for irrigating 1,000,000 acres. The population of Oregon is approximately 1,000,000 and irrigation experts estimate that if all the land in Oregon capable of irrigation was brought into production, it would enable the state to support a population of 25,000,000.

#### Leading Industries

The principal manufacturing industries in 1914, dependent to a large extent upon the raw materials drawn from the state itself, were as follows:

P	Value of Products 0,920,407
Lumber and timber 526 \$2	0.920.407
Lumber and umber	
Flour-mill, gristmill	1,192,573
Slaughtering and meat packing 14	7,486,920
Butter, Cheese, Condensed milk 118	6,567,949
Canning and preserving 71	4,738,067
Woolen goods	1,701,587
	1,335,380
	1,075,016
Food preparations	877,544
Brick and tile, etc 42	521,368
Marble and stone work 24	346,127
Shipbuilding 20	332,074

Other products of manufacture, exclusive of those appearing in the foregoing table, are as follows: agricultural implements, automobile bodies and parts, awnings, tents and sails, baskets, and rattan and willow ware, boxes and cartons (paper), brass and bronze products, brooms, cars (electric and steam), coffee (roasting and grinding), hogsheads and barrels, copper, tin and sheet iron products, flavoring extracts, fur goods, gas and electric fixtures, glass (cutting, staining, and ornamenting), ice, jewelery, lime, liquors (malt), mattresses and spring beds, mineral and soda waters, musical instruments, optical goods, paints, patent medicines and compounds, paving materials, saddlery and harness, stoves (hot-air furnaces and ranges), structural ironwork, tobacco (cigars), vinegar and cider, wirework, wood (turned and carved), woolen goods.

## Agriculture

Total.....\$74,050,000

Sugar beets, hops, potatoes, and flax-seed may also be classed as important crops. Climatic conditions are very favorable to the fruit-growing industry, and some well-known varities of orchard products are grown within the state. The principal fruits are plums, apples, pears, cherries, raspberries, and strawberries which netted the growers \$20,216,000 in 1918. Besides the fresh fruits marketed, a considerable amount were preserved, the canning of fruits amounting to \$2,212,412 in 1914. Dried prunes to the extent of 12,621,817 pounds, valued at \$822,837 were prepared during the same period. In 1918 the vegetable crop of the state aggregated \$36,055,000, and hops, \$450,000.

The following statistics, grouped in five-year periods, show the receipts at Portland of the various products of the state's agricultural industry. Portland being the principal center of distribution for the commerce of the state, these figures are indicative of the extent of production.

The grain receipts of Portland from July 1, 1918, to December 31, 1918, were:

Wheat	٠,			•		•	•	•	•	•		•		•		•		٠.	•			•			 •					5,716
Barley Flour		 ٠			•	•	:	•	•	•	•	•	:	•			• •	 		:			•			•			•	1,490
Oats . Hay .		 													٠.															554

A total of 14,609 carloads of wheat, oats, barley, flour and hay were received at Portland in the year 1918, a gain of 2,027 cars over the 1917 receipts. The wheat movements from the interior to Portland was heavy in the second half of the year, but very little came by way of Portland, as practically all of the surplus of the 1917 crop moved from the wheat fields eastward, in the first six months of the year. Portland's wheat receipts in bushels for the past five years were:

Year.																			Bushels.
1918																			7,789,600
1917																			8,845,400
1916	 						 				 								6,871,800 17,759,300
1915	 						 				 								17,759,300
1914	 																		29,695,900

#### Barley

There was a large increase in barley receipts in 1918 over the previous year. In 1917 there was a strong Eastern demand for the big crop in the Northwest and the bulk of barley moved in that direction. Portland's receipts of barley compared as follows:



240	
Year. 1918 1917 1916 1915	8,560 15,540 69,055
Oats	•
The oats movement to tide water was limited lighter crop available. Receipts in the past fivere:	
Year. 1918 1917	

# 1915 37,725 1914 41,200 Flour

The export demand for flour has brought in the surplus output of interior mills and in the case of wheat-flour receipts will continue large until the 1918 wheat crop is disposed of. Five years' receipts have been:

Year. 1918	Barrels.
1917	
1916	
1915	
1914	. 1,130,800

#### Hay

Receipts of hay during the 1918 period were the largest in the history of the trade. Portland hay receipts in the past five years were:

Year.																						T	01	18	
1918.										 						 	 					72	2,2	0	0
1917											 						 					52	.5	4	0
1916											 											50	),5	2	0
1915										 		:				 						45	0,0	2	0
1914																	 					56	0,6	4	0

The movement of grain, flour and hay to Portland, in carloads, in recent years was reported by the Portland Merchants' Exchange as follows:

Year	Wheat	Barley	Flour	Oats	Hay
1918	5,992	1,149	2,482	1,376	3,610
1917		244	1,152	1,801	2,627
	5,286	444	1,957	1,744	2,526
		1,973	1,416	1,429	2,251
1914	22,843	2,772	2,82 <b>7</b>	2,448	2,802

## Flour and Grist Mills

This industry is second in importance in the state. The total value of the products was \$11,192,573 in 1914, an increase of more than \$2,000,000 as compared with the returns for 1909. Wheat flour comprised 69.2 per cent of the total value of products in 1914, and 67.7 per cent in 1909, and increased in production for the five-year period 431,053 barrels, or 31.7 per cent, and in value \$1,733,774, or 28.8 per cent. There were a total of 95 establishments 1914, equipped with a total of 481 stands of 'rolls, 53 runs of stone and 66 attrition mills. Four establishments runs of stone, and 66 attrition mills. Four establishments manufactured sacks. The products and their value for the 1914 period follow:

	Wheat Flour
Barrels	
Value	\$7,749,619
	Rye Flour
Barrels	4.127
Value	4,127 \$ 16,220
	Barley Meal
Pounds	
Value	\$ 34,806
Corn M	eal and Corn Flour
Barrels	2.867
Value	
Brai	n and Middlings
Tons	51,758
Value	\$1,185,918

-	Feed and Offal	
Tons . Value .		
	Breakfast Foods	
Pounds Value .		

#### Timber Industry

Oregon ranks sixth among the timber producing states of the Union. In 1916 the forest area was estimated at 13,100,000 acres. In 1914 there were 526 establishments associated with the industry, furnishing employment to more than 13,000 persons. The timber products were valued at \$30,920,000, and the value added by manufacture reached \$16,521,419. This industry, which leads all others, embraces logging camps, sawmills, planing mills, wooden box factories, and the manufacture of window and door screens. From 1909 to 1914, while the number of establishments fell off by 187, and the number of wage-earners engaged decreased 1,178, the value of the products increased \$720,550, due, of course, to the higher prices commanded by lumber and commodities. The decline in the number of enterprises was partially due to the fact that in many cases the larger mills absorbed the smaller ones.

#### Butter, Cheese, Condensed Milk

This is a comparatively new industry in Oregon. Its growth is emphasized by the fact that in 1899 only 12 establishments were reported as engaged in the manufacture of butter, cheese and condensed milk, while in 1914 the number had increased to 118 establishments, reporting a total product of \$6,567,949. The production of butter increased during the decade by 6,102,338 pounds, or 120.1 per cent. The quantity of cheese manufactured increased during the same period by 4,059,165 pounds, or 180 per cent. The increase in the manufacture of condensed milk from 1909 to 1914 was 1,368,477 pounds, or 6.3 per cent. Butter constituted 50.3 per cent of the total value of the product for 1914 for the industry as a whole where product for 1914 for the industry as a whole; cheese, 14.5 per cent, and condensed milk, 21.2 per cent. The total production of butter in 1914 was 11,182,937 pounds, and of this, 66.8 per cent was put up in print or rolls. The manufacture of cheese and condensed milk is practically confacture of cheese and condensed milk is practically confined to that of "full-cream cheese" and unsweetened and evaporated milk. The cheese production in 1914, including all kinds, aggregated \$1,912,955, and that of condensed and evaporated milk, \$1,392,698.

## Slaughtering and Meat Packing

In 1914 there were a total of 14 establishments engaged in slaughtering and meat packing, the products consumed by this industry being valued at \$7,486,920, and including fresh beef, veal, mutton and lamb, pork and other fresh meat, pork (pickled), sausage, lard, hides and pelts. Beef and pork are the principal products. The lesser products include pickled beef and other cured, meat puddlings, scrapple, lard compounds and substitutes, tallow, soap stock, sausage casings, fertilizer materials, glue and wool.

#### Livestock

The raising of livestock is extensively carried on, and the industry was valued at \$103,170,000 in 1918. The number of animals on the farms during the same year were as

101101101	
Horses	309,000
Milch cows	
Other cattle	
Sheep	
Swine	309,000

As shown in the table above, there were over 2,000,000 head of sheep in the state during 1918. The wool clippings in the same year yielded \$10,000,000.

### Fisheries

Salmon, halibut, sturgeon, oysters and clams are the principal products of the fisheries. During 1914 the value of canned fish products formed 60.4 per cent of the output of the canning industry which flourishes in the state. Canned fish, clams, etc., produced in this same year totaled \$2,366,075, and salmon, in cases, \$2,314,771. There were prepared 3,672,277 pounds of salted fish, with a value



of \$473,000, and smoked or dried fish to the amount of 189,920 pounds, valued at \$21,507. In 1918 the salmon output was valued at \$7,000,000.

### Mining

The state possesses many varieties of minerals, but the returns derived from this industry as yet are not large. The deposits which have been developed to the greatest extent are those of gold, copper, and coal. The total mineral cutput in 1915, which includes besides the minerals before mentioned, granite and building stone, gems, co-balt, lead, gypsum, and platinum, amounted to \$3,656,545, an increase of over \$300,000 as compared to the aggregate of the year previous. Production of the leading minerals in 1916 were as follows: Copper, 3,581,886 pounds, value, \$881,144; coal, 39,231 short tons, value, \$11,240; gold, 92,-017 fine ounces, value, \$152,223.

#### Canning and Preserving

This is one of the important and distinctive industries of Oregon. The increase in value of products from 1909 to 1914 was \$1,531,007, or 47.7 per cent, and from 1904 to 1909, \$295,696, or 10.2 per cent. The products of the industry may be divided into seven general classes, as follows: Canned vegetables, canned fruits, dried fruits, canned fish, clams, etc., salted fish, smoked and dried fish, and all other products, the latter classification including pickles, preserves, and sauces. The value of canned vegetables formed only six-tenths of 1 per cent of the total value of products for the industry in 1914, 1.5 per cent in 1909, and 1 per cent in 1904; that of canned fruits, 11.4 per cent in 1914, 5.5 per cent in 1909, and 7.4 per cent in 1904; that of dried fruits, 17.9 per cent in 1914, 14.7 per cent in 1909, and 1.1 per cent in 1904; that of fish products, 60.4 per cent in 1914, 65.6 per cent in 1909, and 81.9 per cent in 1904; and that of all other products, 9.7 per cent in 1914, 12.6 per cent in 1909, and 8.6 per cent in

## TONNAGE EXPLAINED Prepared by U. S. Shipping Board

There are five kinds of tonnage in use in the shipping business. They are deadweight tonnage, cargo tonnage, gross, net, and displacement tonnages.

1. Deadweight tonnage expresses the number of tons

of 2,240 pounds that a vessel can transport of cargo, stores, and bunker fuel. It is the difference between the number of tons of water a vessel displaces "light" and the number of tons it displaces when submerged to the "load water line." Deadweight tonnage is used interchangeably with deadweight carrying capacity. A vessel's capacity for weight cargo is less than its total deadweight

2. Cargo Tonnage is either "weight" or "measurement." The weight ton in the United States and in British countries is the English long or gross ton of 2,240 pounds. In France and other countries having the metric system, a weight ton is 2,204.6 pounds. A "measurement" ton is usually 40 cubic feet, but in some instances a larger number of cubic feet is taken for a ton. Most ocean package freight is taken at weight or measurement (W/M), ship's

option.

3. Gross Tonnage applies to vessels, not to cargo. It is determined by dividing by 100 the contents, in cubic feet, of the vessel's closed-in spaces. A vessel ton is 100 cubic feet. The register of a vessel states both gross

and net tonnage.

4. Net Tonnage is a vessel's gross tonnage minus deductions of a space occupied by accommodations by crew. by machinery for navigation, by the engine room and fuel. A vessel's net tonnage expresses the space available for the accommodation of passengers and the stowage of cargo. A ton of cargo, in most instances, occupies less than 100 cubic feet; hence the vessel's cargo tonnage may exceed its net tonnage, and, indeed, the tonnage of cargo

carried is usually greater than the gross tonnage.

5. Displacement of a vessel is the weight, in tons of 2,240 pounds, of the vessel and its contents. Displacement

"light" is the weight of the vessel without stores, bunker fuel, or cargo. Displacement "loaded" is the weight of the vessel, plus cargo, fuel, and stores.

For a modern freight steamer the following relative tonnage figures would ordinarily be approximately correct:

Net tonnage	. 4,000
Gross tonnage	
Deadweight carrying capacity	
Displacement loaded, about	.13.350

A vessel's registered tonnage, whether gross or not is practically the same under the American rules and the British rules. When measured according to the Panama or Suez tonnage rules most vessels have larger gross and net tonnages than when measured by British or American national rules.

## SEED SOWING TABLE

	Quantity per Acre	Weight per Bu. in Lbs.
BeansBuckwheat	2 bushels 2 bushels	60 48 (English weight 60 lbs.)
Peas	2 bushels 30 to 40 lbs. 2 bushels 2 bushels 2 bushels 2 to 3 bushels 2 to 3 bushels 2 to 3 bushels 2 to 3 bushels	60 20 20 20 40 50 56 (English weight
Tares or vetches (alone) Tares or vetches with grain Maize for green feed	2 bushels 1 bushel 2 bushels	60 Lbs.) 60 60 56 (English weight 60 Lbs.)
Sorghum for green Feed (broadcast)	10 to 12 lbs. 4 to 6 lbs. 16 to 20 lbs. 4 to 6 lbs. 1 lb. 1 to 2 lbs. 4 to 6 lbs. 10 to 12 lbs. 4 to 6 lbs. 12 to 16 lbs.	40 60 56 20½ 50 20½
Beans (broadcast)	2½ bushels	60

# **EQUIVALENTS: MONEY, WEIGHTS** AND MEASURERS

Gold Dollar (G \$) = Dutch Guilders (fl.) 2,50  $(\pounds)$  = Dutch Guilders (fl.) 12— Dutch Guilders (fl.) 12— Straits Dollar (\$) = Dutch Guilders (fl.) 1,25
Hongkong Dollar (\$) = Dutch Guilders (fl.) 1,40
Dutch Guilders (fl.) 1,60
Dutch Guilders (fl.) 1,60
Dutch Guilders (fl.) 2,60 Yen (Y) =Dutch Guilders (fl.) 1,25 Nominal Dutch Guilders (fl.) 2,50 Ton Metric = 1000 Kilos.
Ton English = 1016 Kilos = 2240 Engl. lbs.
Long Ton = 1016 Kilos = 2240 Engl. lbs. Short Ton = 2000 Engl. lbs.
Seaton = 40 cubic feet = 1132 cubic meter.
Picul = 62½ Kilos = 136 Engl. lbs.
Koijan = 27 Piculs. Kilo = 2.2046 Engl. lbs. avoirdupois. = 2.6792 lbs. troy. Cwt = 50.802 Kilos.

Meter = 39½ inches = 3.28089 feet.

Meter = 1.09363 Yards. Kilometer = 0,62138 Mile.

Hectare = 2.47114 acres. 1 Liter = 1.761 pints = 0.2201 gallons.

1 Cubic Meter = 1.308 Cub. Yards = 35.3166 Cubic Feet

# Weather Predictions at Sea

## Prepared by the British Meteorological Office

A seaman provided with a reliable barometer and using it intelligently, is usually able to make a good forecast of coming weather. In this he is greatly aided by careful observation of the form and motion of the clouds, especially of the upper clouds, the action of the dry and damp bulb thermometers exposed in the open air out of the sun, and the direction and change of the wind.

Presumably on board every well-conducted ship while making a passage the barometer is regularly read, and it is usually found convenient to carry out this important duty at intervals of four hours' duration. The reading thus obtained should be entered in the ship's log book or plotted on squared paper, without delay, in order that the rate at which atmospheric pressure is decreasing or increasing may be recognized readily at any instant, even by the most cursory inspection. Should the record indicate a brisk fall, say, of two-tenths of an inch in a four-hourly period, this may be accepted as a sign of an approaching disturbance; and the accompanying changes in the winds' direction and force will depend upon the bearing of the ship from the center of the low pressure system she is in at the time.

Storms, whether on sea or land, are invariably connected with natural phenomena which are known meteorologically as "areas of barometrical depression."

If the barometer at any given geographical position be relatively low, as compared with places in the near vicinity, it will be found that the air has a motion around that lowest pressure which is constant in direction so long as the central area of the depression is confined to one hemisphere. North of the equator, the cyclonic wind revolution is opposite to that of the hands of a watch placed face upwards; but it is in the same direction as watch hands to the south of the equator. This cyclonic circulation is very easily remembered by the fact that the westerly wind of the disturbance in either hemisphere, is always nearest to the equator; or, to put this truth in a more seamanlike way, the wind travels round the center of a cyclone, in either hemisphere, in a direction contrary to the apparent diurnal course of the sun in the heavens.

Such a system of relatively low barometer and wind circulation is referred to by expressions such as a "depression," a "cyclonic system" and a "cyclone."

The term cyclone is used in this article in accordance with its original definition by Piddington, to denote a circulation of air in spiral curves round a center of low pressure without reference to the force of the wind experienced. It will therefore include not only tropical revolving storms and hurricanes and disturbances of temperate latitudes in which the wind force is 8 or above; but also the cyclonic depressions that are not attended by winds of force exceeding 7 of Beaufort's Scale.

The force of the wind varies from point to point of the whirl, and it does not necessarily attain to gale force over the whole region affected by the meteor. In addition to this movement of the wind round the lowest barometric pressure of a cyclone, there is a motion of translation of the system itself, whether on sea or on dry land, which depends principally upon the general distribution of the barometric pressure in the neighborhood.

Stated generally, the travel of a cyclone is from east to west in the lower latitudes within about 20 degrees of the equator, in either hemisphere; but from west to east in the higher latitudes. In the North Atlantic, an observer on board ship crossing from New York to Liverpool, is justified in concluding that cyclonic depression is advancing upon him from the westward should he experience a falling barometer with a

southerly wind. In the southern hemisphere, however, under similar conditions of wind and ship's course, the barometer is always lower to starboard than it is to port

Some of these cyclonic systems, of elliptical shape, have been known to cover an area of many thousand square miles in the North Atlantic, their major axes sometimes stretching east and west from shore to shore. In other cyclones, although often of great intensity, the area is of small radius. A vessel under the influence of a cyclonic depression, in the northern hemisphere, heads toward a region of lower barometer on the port tack, and her barometer will therefore fall. On the starboard tack she heads outwards toward a higher barometer; and her barometer, should the cyclone remain stationary or move slowly, will rise. This rule should be reversed in the southern hemisphere.

If, under the conditions mentioned, the barometer rises in the northern hemisphere on the port tack, and in the southern hemisphere on the starboard tack, it shows that the low pressure system is filling up, and is therefore a sign of improving weather.

The usual signs of the approach of a cyclonic depression are the fall of the barometer, accompanied by the rise of the thermometer and the setting in of misty rain, with, in the southern hemisphere, a south-easterly wind. Subsequently, the rain grows heavier as the wind shifts towards south, the barometer still falling, and the wind becomes gradually more westerly. As the "trough," as the line of lowest barometer reading is called, passes over the ship, a heavier shower falls, in which the wind flies to westward or north-westward, the barometer then rises rapidly and the weather becomes colder. This clearing shower is sometimes accompanied by hail, thunder and lightning.

This is the commonest experience of a seaman in the Temperate Zone in the North Atlantic and North Pacific, because the track of his ship generally lies in the southern segment of the wind system.

Bad weather, however, gives sign of its approach before the barometer has begun to fall briskly. If, for instance, in the regions referred to, the mercury has been rising quickly after a gale in which the wind has shifted to the north-west, as just described, then the slightest tendency of the barometer to cease rising or commence falling, if accompanied by any shift of the wind towards south-west or south, ought to put the observer on his guard.

Even before the barometer has begun to fall, with any light winds if cirrus clouds appear in the sky, and especially if they are moving from north-west, he may conclude that a depression is lying to the west of him—and will probably pass over him. Its approach will cause the wind to shift to a southerly point, with the changes in the instruments already described. If, when the wind is westerly or north-northeast, they commonly portend a great increase of wind from the northwest, with snow or sleet in winter.

Lastly, if the wind is easterly, and the high clouds appear to be moving from the south-southwest, they indicate a probable increase of wind from the eastward, and in sultry, summer weather presage thunder-storms.

In the Temperate Zone of the southern oceans, the approach of a depression is heralded by a northerly or north-easterly wind and misty rain, associated with diminishing atmospheric pressure and increase of temperature. As pressure continues to diminish, the wind backs to the northwestward and westward; and subsequently flies in a squall accompanied by heavy rain, to the southwestward as the pressure passes over the ship. As the central line of the depression recedes from

the ship, the barometer rises, the weather becomes squally, and the temperature falls.

It may be well to say a few words about tropical revolving storms, called hurricanes in the West Indies and the South Indian and Pacific Oceans, and typhoons in the Eastern seas. In these storms, the wind always blows in an approximately circular course round the central area, where the barometer is lowest; moving against watch hands in the northern but with watch hands in the southern hemisphere. The whole storm system, in either hemisphere, begins by moving over the passes beyond the tropics at about 30 degrees in the northern, and about 25 degrees in the southern hemisphere. After recurving poleward it moves from west

These storms in their full fury are found in definite districts of the ocean, such as the West Indies, the China Sea, the Bay of Bengal, the South Indian Ocean and the South Pacific Ocean. In other tropical waters they are less frequent and rarely occur in the southern hemisphere and South Atlantic.

Suppose the track of the ship to lie in the northern segment of the low pressure system in the northern hemisphere, and in the southern segment of the southern, i. e., on the left hand side of the path taken by the central area of low pressure in the former case, and on the right hand side in the latter. Then the equatorial wind, which is the southerly wind in the northern hemisphere, and the northerly wind in the southern, will shift to the eastward as the line of the lowest barometer reading approaches the ship and to the north-eastwards in the northern hemisphere and south-eastward in the southern, i. e. poleward, as the line of lowest barometer reading recedes from the ship, passing away to the eastward.

In all these storms the center is the most dangerous part of the system. It may be taken as a rough rule by the seaman who comes within the influence of one of the storms, that, facing the wind, the center bears him from eight to twelve points to the right in the northern hemisphere and to the left in the southern. If he then knows the average direction in which the storms usually move in that locality, he can tell whether the wind he is experiencing is blowing towards the path of the center or away from it. In the former case, he is said to be in the "dangerous" semi-circle; in the latter in the "navigable" semi-circle. The dangerous semi-circle is the right-hand one in the northern hemisphere, the left-hand one in the southern. known to seamen, the right bank or the left bank of a river is named with the observer looking to the mouth of the river; so, as regards the right-hand semi-circle or the left-hand semi-circle, the observer is assumed to be looking towards the direction whither the storm is croceeding.

Rules for handling ships in these storms are given in various books on the subject.

The "Barometer Manual for the Use of Seamen, published by the meteorological office, gives them in concise form. It may, however, be well here to indicate the most dangerous wind, supposing the track of the storm to be that above described.

Northern Hemisphere: Between the equator and 30 degrees N. latitude, most dangerous wind, northeast; about 30 degrees N. latitude, most dangerous wind, east; northward of 30 degrees N. latitude, most dangerous wind, southeast.

Southern Hemisphere: Between the equator and 26 degrees S. latitude, most dangerous wind, southeast; about 26 degrees S. latitude, most dangerous wind, east; southward of 26 degrees S. latitude, most dangerous wind, northeast.

These winds are most dangerous because, in each case, if the wind continues steady from that point, and the barometer continues to fall rapidly, the ship must be on the path of the storm and directly in front of it, so that she is in a position of peril.

# Weather Signals of Pacific Countries

## Philippine Islands

The signals used are: By day: Black cylinder, black cone, black ball, square flag of any color. By night: Red and white lights, either vertically or horizontally. Cylinder or two white lights indicates distant typhoon, movements uncertain. Cone, point up, over cylinder, or a white light and a red light, indicates typhoon passing to northward at considerable distance; strong winds from west to south. Cone, point down, under cylinder, or two red lights, indicates typhoon passing to southward at considerable distance; strong winds from east to south—winds generally less severe than previous signal. Ball over cone, point up, or three white lights, indicates typhoon likely to be dangerous. Cone, point up, or red light between two white lights, indicates typhoon passing to northwardvery near; strong gales from northwest to southwest. Cone, point down, or one white and two red lights, indicates typhoon passing to southward—very near; strong gales from northeast to southeast generally less severe than for previous signal. Ball, or white light between two red lights, indicates typhoon center very near; dangerous gales and heavy squalls. Flags over ball, or three red lights. indicates storm wave; very high tides and floods; no vessel can enter or leave port nor move about harbor.

## Hongkong

The storm signals at this port are made from a mast in front of the Water Police Station (22 degrees 18 minutes north, 11 degrees 10 minutes east), at Kaulung Point, but do not necessarily imply that bad weather is expected at Hongkong. They are, in addition to those under China, which are shown from Blackhead Hill:

- 1. A cone, point up, indicates a typhoon to the north of Hongkong,
- 2. A cone, point up and drum below, typhoon to the northeast of Hongkong.

3. A drum, typhoon to the east of Hongkong.

- 4. A cone, point down and drum below, typhoon to the southeast of Hongkong.
- 5. A cone, point down, typhoon to the south of Hong-
- 6. A cone, point down and ball below, typhoon to the southwest of Hongkeng.

7. A ball, typhoon to the west of Hongkong.

8. A cone, point up and ball below, typhoon to the northwest of Hongkong.

Red signals indicate that the center is believed to be more than 300 miles away from the Colony. Black signals indicate that the center is believed to be less than 300 miles away from the Colony. The above signals will, as heretofore, be hoisted only when typhoons exist in such positions or are moving in such directions that information regarding them is considered to be of importance to the Colony or to shipping leaving the harbor. These signals are repeated at the Harbor Office, H. M. S. Tamar, Green Island signal mast, and the flagstaff on the premises of the Hongkong and Kaulung Wharf and Godown Com-pany at Kaulung.

Urgent Signal: In addition to the above, when it is

expected that the wind may increase to full typhoon force at any moment, the following urgent signal will be made at the Water Police Station and repeated at the Harbor Office: Three explosive bombs, at intervals of ten seconds. A black cross will be hoisted at the same time, above the other shapes.

Night Signals: The following night signals will be exhibited from the flagstaff on the roof of the Water Police Station at Kaulung, the Harbor Office flagstaff, and H. M. S. Tamar:

1. Three lights, vertical, green, green, green indicates that a typhoon is believed to be more than 300 miles from

the Colony.

2. Three lights, vertical, green, red, green, indicates that a typhoon is believed to be less than 300 miles from the Colony.

3. Three lights, vertical, red, green, red, indicates that the wind may be expected to increase to full typhoon force at any moment.

No. 3 signal will be accompanied by the explosive bombs, as above, in the event of the information conveyed by this signal being first published by night. The above night signals will be substituted for the day signals at sun-

set, and will, when necessary, be altered during the night.
Supplementary Warnings: For the benefit of native vessels and passing ocean vessels, a cone will be exhibited at each of the following stations during the time that any of the above day signals are hoisted in the harbor: Gap Rock, Waglan, Stanley, Cape Collinson, Aberdeen, Sau Ki Wan, Sai Kung, Sha Tau Kok, Tai Po. This will indicate that there is a depression somewhere in the China Sea, and that a storm warning is hoisted in the harbor. Further details can always be given to ocean vessels, on demand, by signal from the lighthouses, and further information as to weather forecasts can be obtained at any time by telegraphing or telephoning (free) from Cable Company's Office in Connaught Road, or from Faulung Police Barracks to the observatory.

#### China

Typhoon and Storm Signals: In use at the semaphores of the Imperial Maritime Customs at Hongkong (Kauof the Imperial Maritime Customs at Hongkong (Kaulung), Canton, Swatow. Amoy, Fuchau (Pagoda anchorage), Gutzlaff Island, Wusung, Shanghai (Storm Signal Station), Chifu, Chinkiang, Taku (Tientsin), and Newchwang; systems also used at Wei-hai-wei and Tsing-tau (Kiau Chau): The signals are made by means of shapes used as symbols, having numbers corresponding. No. 1 is represented by an inverted cone; No. 2 is represented by a ball; No. 3 is represented by a diamond; No. 4 is No. 6 is represented by a square; No. 5 is represented by a cone; No. 6 is represented by two cones pointed together.

Typhoon and Continental Depressions: Three shapes at

one yardarm showing the position of the center; two shapes at the other yardarm showing the position of the center; two shapes at the other yardarm showing the region threatened.

Gale Signals: Two shapes at one yardarm showing the general direction of the wind; one shape at the other yardarm showing the region threatened.

## Mexico

Port and Weather Signals: The following signals will be made at the Meteorological Observatories. Pilot offices and Port Lighthouses, and at the office of the General Direction of Lighthouses at Vera Cruz, from a flagstaff, red and white, horizontally, with a white yard; the staff above the yard being also white. The weather for the port in signals white the port is signals. is signaled from one yardarm, and the weather that may be expected outside the port at the other.

A white pennant with a red circle in the middle, above a black ball, signifies fair weather. A black ball signifies rain. Two black balls signify that a storm is expected. A black ball above a white pennant with a red circle in the center signifies variable weather.

## Canada

Cone, point down, indicates probability of gale, at first from an easterly direction; cone, point up, from a westerly direction. If these signals are accompanied by a drum, a heavy gale is probable from the direction indicated. At night, a red light indicates probability of gale or heavy gale at first from an easterly direction; a white light above a red light, from a westerly direction.

(Canada proposes, in due course, to adopt the International Day Signals.)

## New South Wales

Additional Signals used in New South Wales indicate as follows: Diamond, a violent squall; drum, a heavy sea; diamond over drum, gale with clear weather; drum over diamond, gale with thick weather and rain.

The direction from which the gale is blowing is indicated by the yardarm, between which and the masthead the signal is suspended; the signal mast supporting two yards which cross each other at right angles, in the direction of the cardinal points of the compass, the yardarms denoting respectively North, East, South and West. The approach of southerly busters is signalled from the Post Office Tower at Sydney by a white flag with initial letters representing the names of coastal towns, changed as the busters reach the different coastal ports. A red light is exhibited at night for the same purpose.

#### New Zealand

The signals are a black cone and black drum used either with or without a red pennant. The red pennant hoisted below any weather signal made between the hours of 8 a. m. and noon indicates that such signal belongs to the forecast of the previous day. Weather signals without the upon which they are hoisted. The red pennant, when hoisted alone, indicates that the forecast for the day has not been received from Wellington.

#### Tapan

A red ball by day, or a red light at night, indicate strong winds probably.

Red cylinder, or green light at night, indicates approach of stormy weather on coast and inland.

A red cone, point upwards, by day, or red light above green light at night, signifies advance of cyclonic storms, the wind shifting from east to south.

Red cone, point down, by day, or green light above red at night, signifies the approach of storms, the wind shifting

from east to north.

Typhoon Warning signals: By day, the signals are made from a mast with yard by means of red shapes, having corresponding numbers, as follows: 1, a ball; 2, a square; 3, a cone; 4, an inverted cone; 5, a diamond; 6, two cones,

points together.

When three shapes are exhibited vertically at one yardarm, the two upper indicate the position of the storm center; of two shapes exhibited vertically at the other yardarm, the upper indicates the velocity with which the storm center is moving, and the lower the barometric pressure of the depressure for the time being. One shape at the masthead indicates the time for which the position of the storm center is given (signals omitted from notice). At night, the signals are made by means of colored lights, exhibited vertically, the first color mentioned below being at the top.

#### Australia

The flag code signals of the United States of America are used.

## Weather Bureau

## Explanation of Small Craft, Storm and Hurricane Warnings

Small craft warning: A red pennant indicates that

Stant crart warming: A red pennant indicates that moderately strong winds are expected.

Storm Warning: A red flag with a black center indicates that a storm of marked violence is expected.

The pennants displayed with the flag indicate the direction of the wind: White, westerly (from the southwest to north); red, easterly (from northeast to south). The pennant above the flag indicates that the wind is expected to blow from the northerly quadrants; below from the southerly quadrants.

By night a red light indicates easterly winds, and

a white light below a red light, westerly winds, and
Hurricane Warning: Two red flags with black
centers, displayed one above the other, indicate the
expected approach of a tropical hurricane, or one of those extremely severe and dangerous storms which occasionally visit the North Pacific,

No night small craft or hurricane warnings are dis-

played.

A three-light system will soon be installed, indicating the approach of storms in the following manner: Two red lights, north-east storm.

One red light, south-east storm.

Red light above white light, south-west storm. White light above red light, north-west storm. Hurricane or whole gale, two red lights with white light between.

## Where Storm Warnings Are Displayed

Name of Station-	La	t. N.	Long.	W.
	Deg.	Min.	Deg. M	[in.
Tatoosh	. 48	22	124	32
Seattle	47	38	122	20
Tacoma		16	122	23
North Head		11	124	
Astoria	46	11	124	
Portland	45	32	122	43
Eureka		40	124	
Humboldt Bay (Life-Savings Sta-				
tion)		48	124	11
Mendocino		25	123	48
Fort Bragg		33	123	50
Point Reyes Light		11	122	51
Point Lobos		48	122	26
San Francisco Merchants' Ex-			_	
change Building		48	122	26
San Francisco Chief Wharfinger's				
Office		48	122	26
Port Harford		18	120	40
Santa Barbara		25	119	40
Port Los Angeles	- 1 :	03	118	30
Redondo		50	118	24
San Pedro		43	118	17
San Diego		43	117	10
Point Loma		43	117	10

Of the above named places for the display of storm warnings, the following stations are equipped with the international code of signal flags, and are prepared to report passing vessels without charge, viz.:

Tatoosh Island, Washington.

North Head, Washington.
Point Reyes Light, California.
The stations at Tatoosh Island and North Head.

The stations at Tatoosh Island and North Head, Washington, and at Point Reyes, California, are in communication, respectively, with Puget Sound ports, Astoria and Portland, and San Francisco, and they will receive messages for transportation to and from vessel owners and consignees, and masters of vessels lying off or passing within sight of the station.

## Beaufort Scale Used in Forecast Warnings

Force	Designation	Miles per Hour
0	Calm	0 to 3
1	Light air	3 to 8
2	Light breeze (or wind)	8 to 13
3	Gentle breeze (or wind)	
4	Moderate breeze (or wind)	
5	Fresh breeze (or wind)	
6	Strong breeze (or wind)	
7	Moderate gale	
8	Fresh gale	
ğ	Strong gale	
10	Whole gale	
īĭ	Storm	
12	Hurricane	

# North Pacific Weather January

January is usually a stormy month on the North Pacific Ocean. Brisk to high southeast winds may be expected, with gales often lasting for many days. An area of low pressure overlies the North Pacific and is more or less permanent in character. Numerous disturbances prevail on the Washington and Oregon coasts, sometimes moving southwards over California, but more generally moving eastward or southeastward across the United States. Low tule fog occurs in the morning at the mouths of rivers and harbors.

In the seas off the coast of China the northeast winds of the winter monsoon blow with great regularity. Near the Hawaiian Islands strong northeast trades

prevail.

### February

February is also a stormy month on the North Pacific Ocean. High northeast winds lasting for days may be expected north of Cape Flattery, while high south-

easterly winds prevail southward to Point Concepcion. Rainfall is heavy and frequent from Cape Mendocino northward. A rapidly falling barometer with southeast winds is generally followed by several days of stormy weather.

In the western Pacific, northeast trades continue. On the Asiatic coast the dry season prevails.

#### March

March is a month of unsettled weather in the North Pacific Ocean. Southerly winds frequently backing to strong southwesterly winds may be expected. Occasionally disturbances will move northward from the California coast over Oregon and Washington. The rainfall is apt to be heavy along the coast north of Cape Blanco.

April is a month of showers on the North Pacific Ocean. Fresh westerly winds, changing to brisk northwesterly, may be expected along the entire coast, occasionally disturbances may be expected on the Oregon and Washington coasts, passing generally to the northeast. The rainfall is less than in the preceding month.

#### Mav

May is, as a rule, a pleasant month on the North Pacific Ocean. There are but few southeasterly gales. Northwest winds prevail north of Cape Mendocino. Occasionally high north to northwest winds blow steadily for several days along the coast. Gales are rare, and when they do occur are of moderate intensity.

#### June

June is, as a rule, a pleasant month on the North Pacific Ocean. Areas of high pressure may move from the California coast northward through Oregon and Washington. Winds are, as a rule, from the west or northwest. Rainfall is scant south of Cape Mendocino. More or less fog prevails along the California coast.

#### July

July is generally a pleasant month on the Pacific Coast. High northwest winds prevail along the coast of Oregon and northern California. There is also much fog in the afternoon at the entrance of San Francisco Bay. Showery weather is apt to prevail near the Hawaiian Islands, and occasional rain squalls are experienced south of latitude 20 degrees north. In Asiatic waters typhoons may occur.

August is usually a quiet month on the North Pacific Ocean. Storms are infrequent. Rainfall is very light along the coast, especially south of Cape Mendocino. Fogs are frequent on the California coast. Strong north to northwest winds prevail along the entire coast. Typhoons may be expected in Asiatic waters.

August

## September

September is a quiet month on the North Pacific. Occasional storms occur toward the close of the month and rainfall is heavier on the Oregon and Washington coasts. The winds are generally from the northwest, and low fog prevails close to the shore. September is the month of maximum frequency of typhoons in the Western Pacific Ocean.

#### October

October marks the beginning of stormy weather in the North Pacific Ocean. Occasional disturbances with high southeasterly gales may be expected from the Straits of Juan de Fuca south to Point Reyes. Rainfall is heavier and fog is less frequent except south of Cape Mendocino. Typhoons may be expected in Asiatic waters until the close of the month.

#### November

November is a stormy month on the North Pacific Ocean. Southeast gales are frequent, increasing in severity toward the close of the month. This month marks the beginning of the rainy season in California. The wet season in the Philippines draws to a close and typhoons are less frequent in eastern waters, but destructive when they do occur.

#### December

December is a stormy month on the North Pacific Ocean. Southeast gales are frequent and winds from 40 to 60 miles an hour may occur with these storms. The rainfall is heavy along the entire coast. Low-lying fogs frequently occur in the morning along the coast. All harbors north of Aleutian Islands are closed by heavy ice.

## Pacific Ocean Weather

(From Lloyd's Register)

The southeast trade wind blows across the Pacific from South America to Australia, between 7 degrees north and 28 degrees south, but near the American coast to 35 degrees south; the limits fluctuate north or south. according to the sun. Over the western portion of the South Pacific, the southeast trade is interrupted by an extension of the northwest monsoon of the Indian Ocean between the equator and about 20 degrees south, as far as 160 degrees east, between December and April. These northwest winds have been known to extend at this season over the Low Archipelago as far

as 155 degrees west.

The northeast trade wind extends from the coast of North America to about 145 degrees east longitude, and from between about 24 degrees north and from 5 degrees to 10 degrees north. The trade winds meet in about 160 degrees to 180 degrees west in February.

A southwest monsoon blows in July to September, extending from the coast of Central America to about 115 degrees west, between the parallels 5 degrees to 10 degrees north.

Off Cape Horn the wind prevails from northwest to southwest all the year, but is interrupted sometimes by easterly wind, especially from May to September. In Magellan Strait it is almost hopeless for a squarerigged ship to attempt to pass from east to west; strong westerly winds and heavy squalls (williwaws) prevail, with indifferent rocky anchorage far apart.

In China Sea the southwest monsoon begins about the end of April and lasts until the middle of October; it continues longer to the southward of 11 degrees north, than further to the northward. This monsoon is

not so strong as the northeast monsoon.

The northeast monsoon in the China Sea commences in September in the northern part, but rarely reaches the southern part until November. This is the strong monsoon; it generally bursts with a gale, and blows heavily eastward of Formosa Island in December to February. This monsoon ends in March. In Japan Seas northerly winds prevail all the year.

On the south coast of Australia easterly winds may be expected in December to March; the remainder of the year, westerly winds and gales from northwest to

southwest.

On the east coast from Cape Howe to Sandy Cape, winds from northeast prevail from September to March. and westerly winds from April to September. In summer (September to March) hot northwest winds shift suddenly to a cold southeast wind, locally known as "Southerly Busters," very dangerous to vessels near the coast. Easterly gales occur in June to August.

From Sandy Cape to Torres Strait and over the Coral Sea, the southeast trade wind blows home to the coast from April to October, and in Torres Strait till the end of November, when the northwest monsoon (be-

fore mentioned) may be expected.

## CHANGE OF TIME IN ALASKA

Ketchikan: 1 hour earlier than Seattle. Cordova: 2 hours earlier than Seattle. When the steamers reach Ketchikan, northbound, the

ship's time is changed to local shore time, that is, set back one hour. On departing from Ketchikan, south-bound, the ship's time is advanced one hour to correspond with Seattle time.

## COAST GUARD

Stations on the Pacific Coast Superintendent of Stations, Rooms 499 Custom House, San Francisco

#### Alaska

Station No. 305: Latitude 64-30-00; longitude west 165-23-00. Nome.

#### Washington

Station 306: Latitude north 48-22-20; longitude west 124-34-40. Opposite south end of Waadah Island, Neah Bay, 7 miles east of Cape Flattery Lighthouse.

7 miles east of Cape Flattery Lighthouse. Station No. 307: Latitude north 46-53-15; longitude west 124-07-15. Just south of Grays Harbor Lighthouse. Station No. 308: Latitude north 46-43-00; longitude west 124-03-00. Near lighthouse boat landing, Willapa Bay. Station No. 309: Latitude north 46-27-50; longitude west 124-03-25. Thirteen miles north of Cape Disappointment. Station No. 310: Latitude north 46-16-40; longitude west 124-03-00. Bakers Bay one-half mile northeast of Cape Disappointment Lighthouse. Disappointment Lighthouse.

## Oregon

Station No. 311: Latitude north 46-12-00; longitude west

123-57-00. Three-fourths mile southeast of Fort Stevens. Station No. 312: Latitude north 45-34-00; longitude west 123-56-30. North side of entrance of Tilamook Bay.

Station No. 313: Latitude north 44-37-20; longitude 124-

03-40. North side of Yaquima Bay entrance.
Station No. 314: Latitude north 44-00-07; longitude west

124-07-11. Sinslaw River, near mouth north side. Station No. 315: Latitude north 43-42-00; longitude west

124-10-30. Near entrance of Umpqua River, north side. Station No. 316: Latitude north 43-22-50; longitude west 124-18-00. Coos Bay, south side near entrance.
Station No. 317: Latitude north 43-07-00 longitude west

124-25-00. In town of Bandon.

#### California

Station No. 318: Latitude north 40-46-00; longitude west 124-13-00. Near old lighthouse tower, north side of entrance, Humboldt Bay.

Station No. 319: Latitude 38-54-50; longitude west 123-42-30. Three miles southeast from Point Arena Lighthouse.

Station No. 320: Latitude 38-02-20; longitude west 122-59-30. Three and one-half miles north of Point Reyes Lighthouse

Station No. 321: Latitude north 37-54-33; longitude west 122-40-55. Inside Rolinas Lagoon, east side, 1 1-3 miles northeast of Duckbury Point.

Station No. 322: Latitude north 37-47-50; longitude west 122-31-40. Near Point Bonita Lighthouse.

Station No. 323: Latitude north 37-48-10; longitude west 122-27-50. Three-fourths mile east of Fort Paine Light-

Station No. 324: Latitude north 37-46-10; longitude west 122-30-30. On beach in Golden Gate Park, San Francisco.

34 mile south of Point Lobos. Station No. 325: Latitude 37-43-18; longitude west 122-30-18. 33% miles south of Coast Guard Station No. 324.

# APPROXIMATE TIME BETWEEN SEATTLE AND ALASKA PORTS

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# **Transportation Companies**

## Amoy

Ho Chay Co.: Local address, The Bund, Telegraphic address, Hochay. Established 1916. Ports to which vessels trade: Swatow, Hongkong, Straits and Burma. Departures irregular. Agents for the Ho Hong Steamship Co., Ltd., Singapore.

Lim Chin Tsong & Co.: Local address, The Bund. Telegraphic address, Doress. Established 1909. Number of steamers owned, three. Ports to which vessels trade: Swatow, Hongkong, Straits and Burma. Departures irregular. Gross tonnage owned, 17,788. Size of largest vessel in gross tons, 6,711. Head office address, Lim Soo Hean & Co., 47-50 China St., Rangoon. Branch office addresses, E. V. S. Lim & Co., Swatow. Agents for Seang Line of Steamers.

Osaka Shosen Kaisha: Local address, The Bund. Telegraphic address, Shosen, Amoy. Established 1902. Steamers owned: Amakasa Maru, Kaijo Maru, Joshin Maru, Soshu Maru. Ports to which vessels trade: Swatow, Hongkong, Canton, Tamsui, Keelung, Takao, Anping. Departures irregular, Gross tonnage owned, 7,177 tons. Size of largest vessel in gross tons, 2,356 gross tons. Head office, Osaka. Branch office addresses, Osaka Shosen Kaisha, Amoy. Agencies held at Amoy: The Kobe Marine Insurance Co., The Osaka Fire & Marine Insurance Co.

## Bangkok

Siam Steam Navigation Ltd.: Local address, Bangkok. Telegraphic address, Ruafai. Established 1913. Number of steamers owned, eight. Ports to which vessels trade: Coastwise between Bangkok and Singapore; coastwise between Bangkok and Chantaboon and Krat. Regular departures to Singapore twice a week and to Chantaboon twice a week. Vessels lie opposite the company's office and from Wat Phya Krai. Gross tonnage owned, 5,041. Size of largest vessel in gross tons, 968.

The Chino-Siam Steam Navigation Co., Ltd.: Telegraphic address, Thongsiang. Established April, 1909. Number of steamers chartered, six. Number of sailers owned one, Dusit. Ports to which vessels trade: Hongkong, Singapore, Swatow, Saigon, Haihow. Departures not quite regular. Vessels lie at company's wharf. Gross tonnage owned, 15,000. Size of largest vessels in gross tons, 2.800. Head office address, Wat Janawa, Bangkok. Branch office addresses: 30 Queen's Road West, Hongkong; agents, Swatow, Messrs. Jardine, Matheson & Co., Ltd.; agents Singapore, Singa Huah.

The East Asiatic Co., Ltd.: Telegraphic address, Asiatic, Established 1897. Ships registered under head office, Copenhagen. Direct line between Bangkok and Europe. In normal times, one sailing every month. Vessels lie at East Asiatic Co.'s wharves and go-downs (Wat Phya Krai). Head office address, East Asiatic Co., Ltd., 2 Holbergsgade, Copenhagen K.

## Canton

Deacon & Co., Ltd.: Telegraphic address, Deacon, Canton. Agents for British Traders Insurance Co., Ltd., China Fire Insurance Co., Ltd., Alliance Assurance Co., Ltd., Union Insurance Society, Ltd. Sub-agents for "Lloyds" Mercantile Bank of India, Ltd., Hongkong, Canton & Macao Steamboat Co., Ltd., Peninsular & Oriental Steam Navigation Co., Ltd., Danish East Asiatic Line, Eastern & Australian Steamship Co., Ltd., "Ben" Line, Apcar Line.

Dodwell & Co. Ltd., Talangaphic address, Deacon, and Co., Ltd., Talangaphic address, Deacon, Ltd.,

Dodwell & Co., Ltd.: Telegraphic address, Dodwell, Canton. Established 1915 in Canton, 1899 elsewhere. Agents for Dodwell line of steamers to New York, via Panama. Departures regular in normal times. Vessels lie at Hongkong Pier. Head office address, 24 St. Mary Ave., London, E. C. 3. Branch office addresses: Hongkong, Shanghai, Hankow, Foochow, Yokohama, Kobe,

Tacoma, Seattle, San Francisco, Vancouver and Victoria (B. C.), Portland (Ore.), New York, Colombo and Antwerp.

Reiss & Co.: Telegraphic address, Reiss. Established 1797. Head office address, Quay St., Manchester, England. Branch office addresses: London, Liverpool, Hongkong, Canton, Shanghai, Hankow, Chefoo. Agencies held at Canton: New Zealand Insurance Co., British American Assurance Co., Union Insurance Soc. of Canton, Ltd., Ellerman Line of Steamers, Pacific Mail Steamship Co., The Texas Co. of New York.

T. E. Griffith, Ltd.: Local address, Shameen, Canton. Telegraphic address, Griffith, Canton. Agents for T. K. K. and Yuen On Steamship Co. Vessels trade to Hongkong, San Francisco (T. K. K.), Hongkong, Canton (Yuen On S. S. Co.) Regular departures.

Shewan Tomes & Co.: Telegraphic address, Keechong. Established about 1882. Head office address, Hongkong. Branch office addresses: Canton, Shanghai, Tientsin, Kobe, London, New York. Agencies held at Canton: American Asiatic S. S. Co., American & Oriental Line, American & Manchurian Line, "Glen" Line and Messagerles Maritime Co.

#### **Dunedin**

Union S. S. Co. of New Zealand Ltd.: Head office, Dunedin, N. Z. Chas. Holdsworth, managing director; D. A. Aiken, general manager. J. H. C. Bond, general traffic manager; R. McK. McClellan, traffic manager Transpacific and Island services: Hind, Rolph & Co., 230 California St., San Francisco, general agents for the United States. Operating mail, passenger and cargo services from San Francisco to Tahiti, Rarotonga, Wellington (New Zealand) and Sydney (Australia); Wellington to Napier, Gisborne and Auckland; Wellington to Napier, Gisborne and Auckland; Wellington to Sydney and Hobart; Wellington to Picton, Nelson, Westport and Greymouth; Auckland to Sydney; Auckland to Fiji, Tongan and Samoan Islands; Bluff to Melbourne; Sydney to Hobart and Launceston; Sidney to Fiji and Samoan Islands; Melbourne to Launceston and Hobart; Melbourne to Burnie, Devonport and Strahan. The Union S. S. Co.'s fleet consists of 75 vessels. The company has its own offices or representatives in all Australian and New Zealand ports and the principal ports of the world.

#### Eureka

Pacific Steamship Co.: Local address, Wharf, foot of C St. Trades to San Francisco, Marshfield, Astoria, and Portland. Head office address, Pacific Steamship Co., Seattle, Wash. Branch office address, 112 Market St., San Francisco. Two steamers in this trade, gross tonnage, 1057 and 743.

Parr-McCormick Steamship Co.: Local address. Wharf, foot of E St. Telegraphic address, Eureka, Cal. One steamer in this trade, gross tonnage, 358. Ports to which vessels trade, San Francisco, San Pedro, and San Diego. Head office address, Fife Building, San Francisco, Cal

Little River Steamship Co.: Local address. Wharf, foot of E St. Telegraphic address, Eureka, Cal. One steamer in this trade, gross tonnage, 539. Ports to which vessels trade, San Francisco, San Pedro and San Diego. Head office address, 112 Market St., San Francisco.

The Charles Nelson Co.: Local address, 108 F St. One steamer in this trade, gross tonnage, 322. Trades to San Francisco, round trip every seven days. Head office address, 230 California St., San Francisco, Cal.

## **Foochow**

Bathgate & Co.: Telegraphic address, Bathgate. Established 1879. Head office address, Foochow. Agencies held at Foochow: Java-Pacific Line to San Francisco,

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Toyo Kisen Kaisha to San Francisco and South American Pacific ports, Nippon Yusen Kaisha to Victoria and Seattle.

Jardine, Matheson & Co., Ltd.: Telegraphic address, Jardine. Agencies held at Foochow: Canadian Pacific Ocean Services, Ltd., Royal Mail Steam Packet Co., Shire Line, The Waterhouse Steamship Line, Glen Line, operating to Pacific ports.

## Guavaguil

Compania Peruana de Vapores y Dique del Callao: Local address, Malecon, Guayaquil, Telegraphic address, "Vaporuana," Callao. Established in 1906. Number of steamers owned, five. Number of sailers owned, one. Vessels trade between Valparaiso and Colon. Departures, regular, weekly. Vessels lie in the stream. Gross tonnage owned, about 25,000. Size of largest vessel in gross tons, 5,000. Head office address, Plaza Grau, Callao, Peru. Branch office address, Lima, Balboa, Colon; agencies at all ports. Agents for Reyre Hnos. of Paris, France.

all ports. Agents for Reyre Hnos. of Paris, France.

Mercantile Oversea Corporation: Local address, Malecon, No. 607. Telegraphic address, "Bamerico." Established 1st January, 1917. Agents for the New York & Cuba Mail S. S. Co., New: International Shipping Co., San Francisco. Vessels trade to Guayaquill, Puerto Bolivar, Machalilla, Bahia de Caraquez, Esmeraldas, and then through the Panama Canal to New York. Departures irregular, about once a month. Vessels lie in open river. Head office address, Mercantile Bank of the Americas, Inc., 38 Pine St., New York. Branch office addresses, Banco Mercantile Americano del Peru, Lima, Peru; Banco Nacional de Nicaragua, Managua, Nicaragua; Mercantile Bank of the Americas, Inc., Paris, France. Agents for International Shipping Co., Ltd., San Francisco, Cal.; the New York & Cuba Mail S. S. Co., New York (The Ward Line).

Milne, Williamson & Co., agents for Nautilus Steam-

Milne, Williamson & Co., agents for Nautilus Steamship Co., Sunderland, Eng.. Local address, Guayaquil. Telegraphic address, "Milne." Established 1916. Number of steamers owned, eight. Vessels trade from British ports generally, Liverpool, London, Glasgow, Cardiff, etc., to all west coast ports of South America. Regular departures twice a month from England, but only calling at Guayaquil when freight offering. Vessels lie in the stream. Size of largest vessel in gross tons, about 5,000 tons. Head office address, Sunderland, England. Branch office addresses, Guayaquil, Lima, Iquique, Valparaiso and all the small ports. Agents for Weir Line of Steamers. Nautilus Steamship Co., Swayne & Hoyt, San Francisco; C. Hy. Smith, Inc., San Francisco; Anchor Line, Glasgow; Lloyds' Agents, The Sea Insurance Co., Ltd., Liverpool; Royal Marine Insurance Co., London and Liverpool and Globe Insurance Co., Royal Insurance Co., etc.

The Pacific Steam Navigation Co.: Local address, Malecon 408-409. Telegraphic address, "Pacific." Guayaquil. Established, company in 1840; Guayaquil agency, March 13, 1916. Number steamers owned, 37. Vessels trade, Liverpool to Valparaiso and intermediates, via Straits and Canal; Valparaiso to Colon and intermediates, calling Guayaquil north and southbound; Guayaquil to Panama and intermediates. Homeward service not regular; coast service, Valparaiso-Colon, Guayaquil-Panama, fortnightly on itinerary. Vessels lie in the stream. Gross tonnage owned, 272,325. Size of largest vessel in gross tons, R. M. S. Orbita, 15,678. Head office address, Liverpool, 31-33 James St. Branch office addresse, Valparaiso, Callao, Panama, Guayaquil, Lima, Punta Arenas, Ilo, Arica, Mollendo. Coquimbo, Guayacan, Pisagua. Agents of The Royal Mail Steam Packet Co., Union Castle Line and Elder, Dempster & Co.

## Hankow

Butterfield & Swire, agents China Navigation Co. Ltd.: Local address, British Settlement. Telegraphic address, "Swires." Head office address, French Bund, Shanghai. Agents for China Navigation Co., Ltd., Ocean Steamship Co. Ltd.; China Mutual Steam Nav. Co. Ltd., Taikoo Dockyard & Engineering Co. of Hongkong Ltd., Union Insurance Society of Canton.

Jardine Matheson & Co., Ltd.: Agents Indo-China S. N. Co. Ltd. Local Address, British Bund. Telegraphic address, "Inchoy." Number of steamers owned, 40. Ports to which vessels trade, Ichang, Changsha, Shanghai, and all river ports between; also to all China ports, Straits, Japan, Philippines, India and Indo-China. Departures are regular on river services. Vessels lie at company's own pontoons, British Bund. Gross tonnage owned, 95,000 tons. Size of largest vessel in gross tons, S. S. Kutsang, 4,895 tons. Head office address, Hongkong, Jardine, Matheson & Co. Ltd., general manager. Branch office addresses, all China ports, Jardine, Matheson & Co., Ltd., Agents for Royal Mail S. P. Co., Canadian Pacific Ocean Services, Ltd., Frank Waterhouse Line, British India S. N. Co. Ltd.

## Hobart

Shaw, Savill Co.: Local address, Hobart. Ports to which vessels trade, London to Capetown, Hobart, New Zealand ports thence to London. Formerly regular, now occasional. Vessels lie at Ocean pier. Head office address, London.

Union S. S. Co. of New Zealand: Vessels trade to Australasian and Pacific ports. Departures are regular. Head office address, Dunedin, New Zealand.

## Hongkong

Butterfield & Swire: Local address, 1 Connaught Road. Telegraphic address, Swire. Owners of China Navigation Co., Ltd. Agents for Blue Funnel Line and Australasian Oriental line to Philippines and Australia. Ports to which vessels trade: China Navigation Co., China coast and river trade and to Singapore, Siam and Philippines; Blue Funnel Line, Pacific service, U. K. and Straits to China, Japan and Philippines; U. K. and Holland to Java; U. K. and Australia, Java and United States, China, Japan, Philippines and Straits to United States, China, Japan, Philippines, Baratine, Japan, Philippines, P

Douglas Steamship Co., Ltd. (incorporated 1883): Hongkong and South China Coast ports. Steamers arrive at and depart from the company's wharf (near Blake Pier). Fleet of steamers: Haiyang, 2,289 tons; Haiching, 2,080 tons; Haihong, 2,067 tons; Haitan, 1,856 tons. Douglas Lapraik & Co., general managers, address 20 Des Voeux Road Central, Hongkong. Agents at coast ports: At Amoy, Messrs, Douglas Lapraik & Co.; at Swatow and Foochow, Messrs, Jardine, Matheson & Co., Ltd. Regular sailings (subject to alteration) between Hongkong, Swatow, Amoy and Foochow.

Holt's Wharf (Blue Funnel Line): Agents, Butterfield & Swire, Hongkong. Telegraphic address, Swire, Hongkong. Established, 1909. Number of tugs owned, two. Number and size of lighters owned, 20, 60 tons to 550; total tonnage, 6,100 (meast.). Piers or wharves, two wharves, three piers. Godown accommodation, four 4-storied, one 5-storied, capacity, about 60,000 tons. Cranes, lifting power, etc., one 5-ton and two 2-ton. Elevators and steam hoists, 10 electric lifts. Draft of water available at neap and spring tides, 32 feet and 40 feet. General: Length of wharves, 472 and 452 feet respectively. All lighters built of steel and decked, fitted with steam and hand gear for lifting cargo. Railway siding on wharf. Cargo can be loaded or received direct from steamers to freight cars.

Jardine, Matheson & Co. Ltd.: General managers, Indo-China S. N. Co., Ltd. Local address, Pedder St. Telegraphic address, Jardine, "Shires," Transific, etc. Number of steamers owned, 39. Ports to which vessels trade, principal ports between Calcutta and Japan, China Coast Ports, Yangszte ports, Borneo ports, Haiphong, Haihow.

Manila. Also Pacific ports and United Kingdom ports. Manila. Also Pacific ports and United Kingdom ports. Departures regular before the war, irregular at present. Vessels lie at Kowloon Wharves and West Point Wharf. Gross tonnage owned, 92,914. Size of the largest vessel in gross tons, 4,895. Head office address, Hongkong. Branch office addresses: Kobe, Yokohama, Shimonoseki, Taipeh, Canton, Swatow, Amoy, Foochow, Shanghai, Chinkiang, Nanking, Wuhu, Kiukiang, Hankow, Yochow, Changsha, Singatan, Shasi, Jeebang, Nankhyang, Changsha, Singatan, Shasi, Jeebang, Nankhyang, Changsha, Siangtan, Shasi, Ischang, Newchwang, Agencies at Manila, Iloilo, Cebu, Chefoo, Weihaiwei, Singapore, Calcutta, etc. Agencies held for the Waterhouse Steamship Lines, The Indo-China S. N. Co., Ltd., Royal Mail Steam Packet Co., owners of the "Shire" Line of steamers, "Glen" Line, Ltd., British India S. N. Co. Ltd., of steamers, "Glen" Line, Ltd., British India S. N. Co. Ltd., Western Australian Steam Navigation Co. Ltd., Asiatic Steam Navigation Co. Ltd., Canton Insurance Office Ltd., Hongkong Fire Insurance Co. Ltd., Triton Insurance Co. Ltd., Alliance Assurance Co. Ltd., Eastern Assurance Co. Ltd., Queensland Insurance Co. Ltd., China Sugar Refining Co. Ltd., Hongkong Ice Co. Ltd., Ewo Cotton Spinning Weaving Co., Ltd., Kung Yik Cotton Spinning & Weaving Co. Ltd., Yangszte Cotton Mill Ltd., Shanghai & Hongkew Wharf Co. Ltd., Shanghai Dock & Engineering Co. Ltd., Bombay-Burma Trading Corp. Ltd., Nobel's Explosive Co. Ltd., Merryweather & Sons Ltd., British & China Corp. Ltd. (Joint Agents), New York Lubricating Oil Co., Barrett Manufacturing Co., National Gas Engine Co., Ltd., W. & T. Avery (Scales), Linotype & Machinery Ltd., Audinet Lacroix Co. (Lyons).

Kowloon-Canton Railway: British section, 22 miles

Kowloon-Canton Railway: British section, 22 miles 4 ft. 8½ in. gauge and 7½ miles 2 ft. gauge; Chiness section, 89 miles 4 ft. 8½ in. gauge. Local address, Kowloon, Hongkong. Telegraphic address, Railway Kowloon, Hongkong. Opened for traffic October 1, 1910. Company owns British section. Rolling stock: 4 ft. 8½ in. gauge—10 locomotives, 27 passenger coaches, 50 goods vehicles, 2 ft. gauge—3 locomotives, 6 passenger coaches, 3 goods vehicles. Points touched, Kowloon and Canton and 36 stations between Kowloon and Canton. A regular train service of express and other trains is maintained between Kowloon and Canton. The railway terminals are at Kowloon and Canton. Head office address, Kowloon, Hong-

The Hongkong, Canton & Macao Steamboat Co. Ltd.: Local address, Steamboat. Established 1865. Number of West River ports. Departures are regular. Vessel lie at company's pier at Hongkong, Canton and Macao. Gross tonnage owned, 14,822 tons. Size of largest vessel in gross tons, "Kinshan," 2,861 tons. Head office address, Hongkong. Branch office address, Canton and Macao.

The Hongkong & Kowloon Wharf & Godown Co. Ltd.: Local address, Kowloon, Hongkong. Telegraphic address, Godowns, Hongkong. Established, 1886. Numaddress, Godowns, Hongkong. Established, 1886. Number of launches owned, eight steam tugs. Number of lighters owned, 82; capacity, 7,500 tons. Piers: Four at Kowloon, each 2 berths, length 500 to 650 feet, draft 30 feet at lowest spring tides. Piers, one at Hongkong for coasting steamers. Godown accommodation, Kowloon, 500,000 tons; Hongkong, 80,000 tons. Fire engine and upto-date fire appliances. Ten locomotive steam cranes, minimum lifting capacity 15 tons; elevators and steam boists. hoists.

## Honolulu

Inter-Island Steam Navigation Co. Ltd.: 39 Queen St., Honolulu, T. H. Telegraphic address (for both cable and wireless), "Maunaloa." Incorporated February 19, 1883. Number of steamers owned, 15. Ports to which vessels trade, all ports in Hawaiian Islands. Regular, semi-weekly sailings. Vessels lie at Piers 12, 13 and 14, Honolulu. Gross tonnage owned, 10,097. Size of largest vessel in gross tons, Mauna Kea, 1,566 gross tons; length 239 feet. Head office address, 39 Queen St., Honolulu, T. H. Names and gross tonnages of company's steamers, Mauna Kea, 1,566; Kilauea, 1,338; Kinau, 975; Claudine, 840; Mauna Loa, 850; Helene, 672; W. G. Hall, 505; Doris, 736; Likelike, 374; Mikahala, 444; Niihau, 341; Kaiulani, 384; Noeau, 294; Ke Au Hou, 263; Wailele, 515. Messrs, Welch & Co. of San Francisco and Messrs Lam-

Messrs, Welch & Co. of San Francisco and Messrs Lambert Brothers in London are the foreign representatives. Floating Dry Dock: Capacity, 4,500 tons. Length over keel blocks, 352 feet; length over wings, 301 feet, 9 inches; draft over keel blocks, 23 feet 6 inches; width over all, 100 feet; width between wings (top), 84 feet; width between wings (bottom), 76 feet. It is the intention of the company to extend the dock to 12 pontoons, giving a lifting capacity of 7,000 tons and a length on keel blocks of 460 feet. Facilities for hull or machinery repairs of all kinds are unexcelled. Adjacent to the dock the Honolulu Iron Works Co., have large machine, boiler, blacksmith and copper shops, foundry and galvanizing plants equipped with modern tools for handling work of any size with despatch. Compressed air and oxy-acetylene apparatus are available. Artesian well water supplied to shipping from company's well.

Company's well.

Nederland & Rotterdam Lloyd Royal Mail Lines:
(Joint Service). J. D. Spreckels & Bros. Co., general agents. Steamers, Wilis, Rembrandt, Rindjani, Vondel, Grotius, Kawi, Oranje. Service to Japan, China, Java, Manila, the Straits Settlements, and the Far East.

Oahu Shipping Co. Ltd.: Local address, Pier 17, Honolulu, Oahu, T. H. Established, January, 1914. Number of presele street eight all power schoolers. Ports to

ber of vessels owned, eight, all power schooners. Ports to which vessels trade, On Oahu, from Honolulu to Kaalaea, Waikane, Waimanalo, Mokapu, Heeia, Kaneohe and Kailua; on Hawaii, from Honolulu to Kailua, Kookena, Napoopoo, Hoopulea, Keauhou, Puako, Kawaihae and Mahukona. Departures are not regular with the exception of motor schooner James Makee, which sails every Tuesday for Hawaii ports. Vessels lie at Pier 17. Gross tonnage owned, 570 gross tons. Head office address, Room 207, Kauikeolani Bldg., Honolulu. Names of vessels and gross tonnages: James Makee, 223.36; J. A. Cummins, 118; Mokolii, 58.66; Kaena, 35; Heeia Maru, 22; Kuaihelani, 38.26; Komokila, 57.30; Kahakoilani, 19.27.

## Iquique

A. & O. Groothoff, Agents. German lines. Edw. E. Muecke, Agent. United Fruit Steamship Co. Gildemeister & Co., Agents. German lines.

Harrington, Morrison & Co., Agents. Tank steamers of the Standard Oil Company plying between Chilean nitrate ports and San Francisco, New York, Vancouver, B. C., Peruvian and Mexican oil ports.

Lockett Bros, & Co., Agents.

Cia. Sud Americana de

Vapores. Weekly sailings to Canal Zone. Pacific Steamship Navigation Co. Sailings to Canal Zone, about twice a month. Monthly service to France and England via Canal Zone or Magellan Straits.

Marcial Velez, Agent. Compania Peruana de Vapores, twice a month sailings to Canal Zone.

Nitrate Agencies Ltd., Agents (W. R. Grace & Co.). Grace Steamship Co., monthly sailings to New York and San Francisco, Cal. U. S. & Pacific Steamship Co., monthly sailings to New York; sometimes to New Orleans, La., Norfolk, Va., or Baltimore, Md. Toyo Kisen Kaisha, one steamer every two months to Peru, Canal Zone, Mexico, San Francisco, Honolulu, Japanese ports and Hongkong.

#### Manila

Australian-Oriental Line: I.ocal address, 503 Calle Echague. Telegraphic address, "Yuills." Established 1912. Number of steamers owned, two. Vessels trade to Australian east coast ports and Hongkong. Gross tonnage owned 6,000 tons. Size of largest vessel in gross tons, 3,000 tons. Head office address, Bridge St., Sydney, Australia. Branch office addresses, Manila, Hongkong.

Canadian Pacific Railway Co.: Local address, Pacific Steamship Service, 18-20 Escolta. Telegraphic address, "Canpacline." Number of steamers owned, four in Pacific service. Vessels trade to Vancouver and Victoria to Yokohama, Kobe, Nagasaki, Shanghai, Manila and Hongkong. Regular schedule. Vessels lie at Pier 5. Gross tonnage owned, Empress of Russia, 16,810; Empress of Japan, 5,940; Empress of Asia, 16,909; Monteagle, 6,163. Head office address, Montreal, P. Q., Canada.

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Compania General de Tobacos de Filipinas: Telegraphic address "Tabacelera." Established 1882. Number of vessels owned, seven. Vessels trade to inter-island and European ports. Departures are irregular. Gross tonnage owned, 10,700. Size of largest vessel in gross tons, 3,060. Head office address, Barcelona, Spain. Branch offices, London, Manila, New York.

Compania Transatlantica (Barcelona, Spain): Telegraphic address, "Atlantica-Manila." Established 1884. graphic address, "Atlantica-Manila." Established 1884. Number of steamers owned, 23 (4 building). Three steamers trading between ports of Spain to Manila, via Singapore, Colombo, Suez, and Port Said. Ordinarily monthly departures in normal times, now irregular. Gross tonnage owned, total, 104,862 tons; on Manila trade, 12,397. Size of largest vessels in gross tons, 10,348. Head office address, Compania Transatlantica, Barcelona, Spain.

Macleod & Co. Inc.: Local address, Chaco Bldg., Manila. Telegraphic address, "Macleod." Established 1860. Vessels lie at Government Piers. Branch office addresses, London, New York, Chicago, Cebu. Agents for Royal Mail Steam Packet Co., Andrew Weir & Co., Ellerman & Bucknall S. S. Co.

Macondray & Co. Inc.: Local address, No. 18 Plaza Cervantes. Telegraphic address, "Macondray." Established 1899. Agents for Barber Line of steamers, Dodwell & Co., New York Line, Eastern & Australian S. S. Co.,

Meerkamp & Co.: Local address, 979 Muelle de la Industria, Manila. Telegraphic address, "Meerkamp." Established 1882. Vessels trade to Netherlands, India, Europe and United States. Departures are regular. Vessels lie at piers or bay, as ordered by Customs House officials. Agents for Steam Navigation Co. "Nederland," Rotterdam Lloyd S. S. Co., Koninklijke Paketvaart Maatschappy, Java-Pacific Lijn, Java-China-Japan Lijn.

Mitsui Bussan Kaisha Ltd.: Local address, No. 90 Rosario, Manila, P. I. Telegraphic address, "Mitsui." Established 1876. Number of steamers owned, 19. Time chartered steamers, 36 to 60, 150,000 to 250,000 tons dead weight capacity. Vessels trade to all world ports. Departures irregular. Gross tonnage owned, 91,620 tons dead weight capacity. Size of largest vessel in gross tons, "Kongosan Maru," 5,165 tons. Head office address, Mitsui Busan Kaisha Ltd., Tokyo. Eighty-five branch offices in various ports in the world.

Pacific Mail Steamship Co.: P. C. Moston, general

Pacific Mail Steamship Co.: R. C. Morton, general agent.

Smith, Bell & Co. Ltd.: Local address, El Hogar Filipino, Manila, P. I. Telegraphic address, "Shipping," Manila. Established 1859. Number of steamers, interisland vessels only. Ports to which vessels trade, agencies for vessels plying between Manila and China coast ports, also regular sailings to U. K. and United States, via way ports. Regular sailings twice a week for Hongkong and once a month for U. K. and United States. Vessels lie at Pier 3 and Pier 5. Head office address, Smith, Bell & Co. Pier 3 and Pier 5. Head office address, Smith, Bell & Co. Ltd., El Hogar Filipino, Manila; London address, Smith Wood & Co., 3 and 4 Lime St. Square, London, E. C. Branch office address, Smith Bell & Co. Ltd., Cebu, Iloilo, and other ports in the islands. Agents for O. S. S. Co. Ltd., C. M. S. N. Co. Ltd., Indo-China Steam Navigation Co. Ltd., China Navigation Co. Ltd., China Navigation Co. Prince Line, Ltd., Apear Line, Princip Ltd., Co. Ltd., China Steam Navigation Co. Ltd., China Navigation Co. Ltd. British India S. N. Co. Ltd., Canadian Pacific Railway (Cebu and Iloilo), American and Oriental Line, Danish East Asiatic S. S. Line, Glen Line Ltd. and Kishimoto Kisen Kaisha.

The Robert Dollar Co.: Local address, Kneedler dg. Telegraphic address, "Dollar." Local office opened Bldg. Telegraphic address, "Donar. Local office 5911912. Number of steamers owned, three. Charters average 1912. Number of steamers owned, three three which vessels trade. Hongage five to seven. Ports to which vessels trade, Hong-kong, Shanghai, Japan, Vladivostok, Vancouver, San Francisco. Departures irregular. Gross tonnage owned, 21,670. Size of largest vessel in gross tons, 7,250. Head office address: The Robert Dollar Co., 230 California St., San Francisco; Branch office address, The Robert Dollar Co., Shanghai, Hongkong, Manila, Kobe, New York; The Canadian Robert Dollar Co., Vancouver—Dollar Lumber Co., Tientsin, Hankow. Agents for The Dollar Steamship Line of Victoria, The Carnation Milk Products Co.

Toyo Kisen Kaisha: Local address, Chaco Bldg. legraphic address, "Toyokisen." Established 1898. Telegraphic address, "Toyokisen." Established 1898.
Number of steamers owned, nine. Chartered steamers, four (approximately 12,000 tons). Vessels trade—North American Line: San Francisco, Honolulu, Yokohama, American Line: San Francisco, Honolulu, Yokohama, Kobe, Nagasaki, Shanghai, Manila and Hongkong; South America Line: Hongkong, Moji, Kobe, Yokohama, Honolulu, Hilo, San Francisco, Los Angeles, Salina Cruz, Balboa (Panama), Callao, Arica, Iquique and Valparaiso (S. A. Transpacific Line). Regular sailings as per (S. A. Transpacine Line). Regular sailings as per schedules issued from time to time. Vessels lie at Pier No. 5. Gross tonnage entered 85,193. Size of largest vessel in gross tons, 13,398 tons. Head office address, Tokyo. Branch office addresses, Yokohama, San Francisco, Kobe, Shanghai, Manila and Hongkong.

Warner Barnes & Co. Ltd.: Local address, Hogar Filipino Bldg., Calle Juan Luna. Telegraphic address, "Warner," Manila. Head office address, 10-11 Mincing Lane, London, E. C. Branch offices, Iloilo, Panay, Philippine Islands. Agents for Nippon Yusen Kaisha, American Asiatic S. S. Co., Bibby Line, Cunard Line, White Star Line, International Sleeping Car Co.

W. F. Stevenson & Co. Ltd.: Local address, Muelle del Rey. Telegraphic address, "Stevenson." Established 1873. Head office address, 40 Trinity Square, London, E. C. Branch office address, Iloilo, Cebu and Zamboanga, C. Branch office address, Iloilo, Cedu and Landoung, P. I. Agents for Peninsular and Oriental S. N. Co., "Ben" Line of steamers, Ocean S. S. Co. Ltd., and China Mutual S. N. Co. Ltd. (New York Services), and Osaka

### Melbourne

Huddart Parker Ltd.: Steamship owners, coal importers, tug proprietors. Head office, 464-466 Collins St. Telegraphic address, "Rempoti." Telegraphic codes used, A1, A.B.C. 5th Edition, Western Union "Bentley's." W. T. Appleton, managing director. Branches and agencies—Victoria: Melbourne, Captain P. W. Bull, general manager; Geelong, G. E. England, manager; Ballarat, R. Hare, manging agent: Portarlington C. G. Brown clerk in charge: Geelong, G. E. England, manager; Ballarat, R. Hare, managing agent; Portarlington, C. G. Brown, clerk in charge; Queenscliff, T. Jenner, agent; Sorrento, R. Chalmers, agent; Dromana, L. C. Leech, agent; Portsea, W. H. Goss, agent; Bendigo, A. G. Palmer, agent; Tasmania; Hobart, Capt. J. W. Evans, manager; Launceston, Tasmania Woolgrowers' Agency Co. Ltd., agents; Circular Head, C. Edwards, agent; West Devonport, River Don Trading Co., agents; New South Wales: Sydney, Captain T. L. Webb, resident director, E. Chaffer, assistant manager; Newcastle, C. B. Greaves, manager; Queensland: Brisbane and other main ports, Macdonald, Hamilton & Co., agents; South Australia: Adelaide, D. & J. Fowler Ltd., agents; Port Pirie, Trelevan & Brown, agents; Port Augusta, Elder Smith & Co. Ltd.; West Australia: Albany Dalgety & Co. Ltd., agents; Fremantle, Dalgety Albany Dalgety & Co. Ltd., agents; Fremantle, Dalgety & Co. Ltd., agents; Geraldton, Dalgety & Co. Ltd., agents; Kalgoorlie, Dalgety & Co. Ltd., agents; Perth, Dalgety & Co. Ltd., agents; Perth, Dalgety & Co. Ltd., agents; Dunbury, Thos. Hayward & Son, agents; Busselton, A. R. Bovell, agent; Dongarra, S. F. Moore, agent; New Zealand; Wellington, C. W. Jones, manager for New Zealand; Auckland, D. Ryan, manager; Gisborne, Dalgety & Co. Ltd., agents; Napier, C. H. Cranby & Co., agents; Christchurch, Kinsey & Co., agents; Dunedin, T. J. Parker, manager; Invercargill, J. G. Ward & Co. Ltd., agents; Blenheim, W. E. Clouston, agent; Timaru, Canterbury Farmers Co-operative Association, agents; Tokomery Farmers Co-operative Comaru Bay, Tokamaru Farmers' Co-operative Co. Ltd., agents; London, T. Free, agent, 101 Leadenhall St.

McIlwraith, McEacharn & Co. Pty. Ltd.: Tele-

McIlwraith, McEacharn & Co. Pty. Ltd.: Telegraphic address: Coomera. Number of steamers owned: 10. Ports to which vessels trade: Sydney, Melbourne, Adelaide, Pirie, Albany, Fremantle, Geraldton. Departures are regular. Vessels lie at Australian wharf. Grosstonnage owned, 32,200. Size of largest vessel in grosstons: 9,424. Head office address: 94-96 William Street, Melbourne. Branch office addresses: London, England; Newcastle, New South Wales; Sydney, New South Wales; Adelaide, South Australia; Geelong, Victoria; Albany, West Australia; Fremantle, West Australia; Premantle, West Australia; Premantle, West Australia; Agencies held: Federal Shire Lines, American-Australian Lines, Oceanic (Spreckels) Line, Norican-Australian Lines, Oceanic (Spreckels) Line, Nor-

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wegian-Australian Line, Swedish-Australian Lines, Austral-European Line.

Melbourne Steamship Co. Ltd.: Local address, 27-31 King St., Melbourne. Telegraphic address, "Advance," Melbourne. Present company was incorporated in October, 1904, taking over the business of an earlier company bearing the same name, which was incorporated in the year 1895 to absorb the business of A. & J. McIntyre, Hugh R. Reid & Co., and Jas. Deane & Co. Number of steamers owned, 8 steamers and 2 steam tugs. Vessels trade to all the principal ports of Australia, except those of Queensland, also Australia to New Zealand ports and return. Regular services of passenger and cargo steamers. Pier or dock where vessels lie, leased berths on north and south side of River Yarra and at Williamstown. Gross tonnage owned, 18,380. Size of largest vessel in gross tons, 3,854 gross tons. Head office address, 27-31 King St., Melbourne. Branch office addresses—New South Wales; Sydney, Corner King and York St.; Newcastle, Watt St.; South Australia: Port Adelaide, Lipson St.; Western Australia: Fremantle, Cliff St., Perth, St. George's Terrace. Tasmania: Devonport; also agents at the Australian ports: at London: W. Lund & Sone other Australian ports; at London: W. Lund & Sons, 7 E. India Ave., London, E. C.; Consulting Engineers, Thompson Eyres & Bryers, Baltic Chambers, John St., Sunderland. Agents for British Anti-Fouling Composition & Paint Co. Ltd of London. Melbourne Steamship Co. also have in addition to the above an engineering works and floating docks at Williamstown, Victoria. The latter is capable of accommodating vessels up to 190 feet long, 31 feet beam and 15 feet draft, whilst at the engineering works all classes of engineering, boiler making and ships, repairs are executed.

Union Steamship Co. of New Zealand Ltd.: Local address, 59 William St. Telegraphic address, "Satrap." Established 1875. Number of steamers owned, 74. Ports to which vessels trade, New Zealand, South Sea Islands, Australia, Vancouver, San Francisco, India, Society and Cook islands. Departures are regular. Vessels lie at various river berths. Gross tonnage owned, 242,329 tons. Size of largest vessel in gross tons, 13,415. Head office address. Dunedin, New Zealand. Branch offices in all Zealand ports, Suva, Levuka, Apia, Rarotonga, Papeete, Calcutta, Singapore, Batavia, Semarang, Soerabaia, Hopetown, Honolulu, Vancouver, San Francisco and London. Agents for Canadian-Australasian Royal Mail Line, San

Francisco Royal Mail Line.

#### Newcastle

Adelaide S. S. Co. Ltd. (branch office): Local address, Bolton St., Newcastle. Established 1890. Number of steamers owned, 24. Vessels trade to Australian coast. Regular departures for passenger ships. Size of largest vessel in gross tons, 8,000. Head office address, Adelaide, South Australia. Branch offices in all main ports—Sydney, Brisbane, Melbourne, Fremantle, Townsville, Cairns, Albany, Port Pirie, Port Augusta. Agents for G. S. Yuill & Co.

Australian Steamship Ltd., Howard Smith Ltd., managing agents: Local address, Bolton St., Newcastle. Telegraphic address, per Eastern Extension, "Howdsmith," per Reuters, "Serenareis." Established 1912. Number of steamers owned, 29. Vessels trade to all Australian ports. steamers owned, 29. Vessels trade to all Australian ports. Departures are regular for passenger ships. Gross tonnage owned, 91,300. Size of largest vessel in gross tons, 8,000. Head office address, Market St., Melbourne, Victoria. Branch offices, Sydney, Brisbane, Maryborough, Rockhampton, Mackay, Cairns, Cooktown, Adelaide, Port Pirie, Fremantle, Geelong, Port Arlington.

Union Steamship Co. of New Zealand Ltd.: Local address Watt St., Newcastle. Telegraphic address. "Williams." Established 1876. Number of steamers owned, 72. Ports to which vessels trade, Newcastle, Sydney,

rams." Established 18/6. Number of steamers owned, 72. Ports to which vessels trade, Newcastle, Sydney, Melbourne, Tasmania, New Zealand, Samoa, Fiji, Honolulu, San Francisco, Seattle, Vancouver. Regular departures for passenger ships. Gross tonnage owned, 233,665. Size of largest vessel in gross tons, 13,415. Head office address, Dunedin, New Zealand. Branch offices, Melbourne Sydney, Hobart, Launceston, Devonport, Strahan Rurnie Stanley han, Burnie, Stanley.

## Penang

Eastern Shipping Co., Ltd.: Local address, Penang, traits Settlements. Telegraphic address, "Shipping," enang. Established, January, 1908. Number of steam-Penang. ers owned, 16. Vessels trade to Straits Settlements and Burma. Vessels lie in Penang Roads. Gross tonnage owned, 4,410. Size of largest vessel, S. S. "Renong," 732 gross tonnage. Head office address, 43 Beach St., Penang, Straits Settlements.

#### **Portland**

The San Francisco & Portland Steamship Co.: Operates the steamships Beaver and Rose City between Portland and Astoria, Ore., and Los Angeles, via San Francis-co, in a freight and passenger service. A steamer leaves each port every sixth day. Communications regarding each port every sixth day. Communications regarding rates, reservations, etc., should be addressed to F. Schafer, D. F. A., 517 S. Spring St., Los Angeles; F. O. Schullerts, agent, Pier 40, San Francisco; G. W. Roberts, agent, Astoria, Ore; W. D. Wells, agent, Ainsworth Dock, Portland, or G. L. Blair, general manager, 403 Monadnock Bldg., San Francisco. The Beaver and Rose City are steel steamships approximately 5,000 tons, oil burning, and 15 knote speed and 15 knots speed.

### **Puntarenas**

Empresa Trasportes Maritimos: Local address, Puntarenas, C. R. Telegraphic address, "Empresa," Puntarenas. Established 1890. Number of steamships owned, 1; also 14 motor vessels. Vessels trade to Cristobal, C. Z., and Costa Rica ports along coast. Vessels lie at Empresa pier, inner harbor. Head office address, Puntarenas. Branch office, address, care of United Fruit Co., Cristobal,

#### Salaverry

Gonzales Larranga Hermanos: Local address, Salaverry, Calle de La Rivera. Telegraphic address, "Gonlahr." Established 1890. Agents of the Peruvian Steamship

Juan Dalmau: Telegraphic address, Dalmau. Established 1885. Agent of the Compania Sud Americana de

Vapores.

The Salaverry Agencies Co.: Local address, Salaverry, Calle de La Rivera. Telegraphic address, "Salagenco." Established 1900. Head office address, Messrs. W. R. Grace & Co., Lima. Agents of Merchants Line, North & Pacific Line, The Pacific Steam Navigation Co., The Royal Mail Steam Packet Co., Johnson Line, Toyo Kisen Kaisha.

#### San Francisco

A. O. Lindvig, Ship Owner; Head office, Christiania, Norway. Head office, Pacific Coast, San Francisco, 280 Battery St., B. Lindvig, general agent. Lines operated battery St., B. Lindvig, general agent. Lines operated by the company: South America Pacific Line, S. S. Regulus, 6,000 tons; S. S. Baja California, 2,250 tons; S. S. Sinaloa, 2,550 tons, Plying between San Pedro and San Francisco, Cal., and Puget Sound, Wash., to all main ports in Peru and Chile, as far south as Valparaiso. S. S. Governor Forbes, 2,500 tons, plying between San Francisco and San Pedro, Cal., to all main ports on the west coast of Mexico and Central America, also Colombia and Ecuador as far as Guaraguil Represented by agents at the dor as far as Guayaquil. Represented by agents at the following ports of call: Mazatlan, Manzanillo, Acapulco, Salina Cruz, Champerico, San Jose de Guatemala, Aca-jutla, La Libertad, La Union, Corinto, Punta Arenas, Balboa, Buena Ventura, Manta, Guayaquil, Callao, Supe, Mollendo, Arica, Antofagasta and Valparaiso.

Atkins, Kroll & Co. (The Pacific Islands Line): Local address, 311 California St., Telegraphic address, "Atisco," San Francisco. Established 1906. Number of sailers owned, 7, also a number of chartered vessels. Ports to which vessels trade, all ports in Philippines, Tahiti, Cook, Samoa, Fiji, Tonga, New Zealand, Gilberts, Marshall, Carolinas and Marianas Islands (general South Sea Islands). Departures irregular. Branch offices, Guam, Marianas Islands, cables "Atolia"; Zamboanga, Philippine Islands, cables "Atanga."

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China Mail Steamship Co., Ltd.: Local address, 416 Montgomery St., San Francisco. Telegraphic address, Chimail. Established, 1915. Number of steamers owned, three; China, Nile, Nanking. Ports to which vessels trade: San Francisco to Hongkong via Honolulu, Yokohama, Kobe, Nagasaki and Shanghai. Regular schedule. Gross tonnage owned: 19,000. Size of largest vessel in gross tons: 8,000. Branch offices at all ports of call.

Commonwealth Government Line of Steamers: Between Australian ports and Los Angeles Harbor, San Francisco, Puget Sound and British Columbia. Guthrie & Co., agents. Own about 50 steamers. Ralfour. irregular. Head office, Melbourne, Established, 1911.

E. C. Evans & Sons Inc.: Local address, 260 California St. Telegraphic address, Dewgrip. Established 1881. Vessels trade to Avonmouth and Swansea, England. Departures every 60 days (suspended). Agents for Maple Leaf Line of Steamers.

Geo. A. Moore & Co.: Head office, 212 California St., San Francisco. Correspondents at Tahiti, Sydney, Melbourne, London, Manila, Hongkong, Yokohama. Line operated: South Sea Line, sailing vessels to Tahiti, Australia and Philippine Islands.

Harrison Direct Line: Local address, Balfour, Guthrie & Co., agents. Telegraphic address, Balfour. Established, 1911. Number of steamers owned, 55. Vessels trade to London, Liverpool and Glasgow, South America, Australia, Orient from Los Angeles, San Francisco, Seattle, Tacoma, Orient from Los Angeles, San Francisco, Seattle, Tacoma, Victoria and Vancouver. Monthly departures. Head office address, Liverpool; Pacific Coast head office of Balfour, Guthrie & Co., San Francisco. Branch offices, Seattle, Tacoma, Portland, Vancouver, Los Angeles.

Hind, Rolph & Co.: Local address, 230 California St. Telegraphic address, "Rolph." Established 1898. Numbers of sailers owned, 15. Not in regular routes; spinicipally in Pacific Ocean, trades. Cross toppage

principally in Pacific Ocean trades. Gross tonnage owned, 14,422. Size of largest vessel, American bark Annie M. Reid, 2,165 tons gross. Branch office, Campbell block, Honolulu. Agents for Union Steamship Co. of New Zealand Ltd., operating regular passenger and freight steamers from San Francisco to Tahiti, Rarotonga, New Zea-

ers from San Francisco to Tahiti, Rarotonga, New Zealand and Australasian ports.

Java-Pacific Line (J. D. Spreckels & Bros. Co., general agents): Local address, 60 California St. Telegraphic address, Spreckels. Established, 1915. Number of steamers owned, four, "Bintang," "Tjisalak," "Soerakarta," and "Ceylon." Ports to which vessels trade: Hongkong, Manila, Batavia, Cheribon, Semarang, Soerabaia, Macassar. Departures regular. Vessels lie at Pier 5. Gross tonnage owned 29,000. Size of largest vessel in gross tons, 8,039, General agents, J. D. Spreckels & Bros., 60 California St.

Matson Navigation Co.: Local address, 268 Market St. Number of steamers owned: 7, one motor ship. Vessels trade to Hawaiian Islands. Vessels lie at piers 28 and 30. Gross tonnage owned: 47,173. Size of largest vessel in gross tons: 10,261. Branch offices: Castle & Cooke Ltd., Honolulu; C. Brewer & Co., Hilo; Alexander & Baldwin, Puget Sound and Kahului.

Nederland & Rotterdam Lloyd Royal Mail Lines (Joint Service): J. D. Spreckels & Bros. Co., general agents, 601 Market St. Steamers (10,000 tons displacement), Wilis, Rembrandt, Rindjani, Vondel, Grotius, Kawi, Oranje. Service from San Francisco and Honolulu to Japan, China, Java, Manila, the Straits Settlements, and the Far East. Sailings fortnightly.

the Far East. Sailings fortnightly.

Oceanic Steamship Co. (Spreckels Line): Local address, 60 California St. Telegraphic address, Spreckels. Established, 1881. Number of steamers owned, three. 10,000 tons displacement, twin screw, steel vessels, double bottoms, water-tight compartments, 2 sets of triple expansion engines developing over 8,000 h. p. and capable of steaming over 17 knots an hour. Vessels, "Sonoma," "Sierra," and "Ventura." Ports to which vessels trade: Honolulu, Samoa, Sydney. Departures regular. Three weekly sailings. Vessels lie at Pier 37. General passenger office, 601 Market St.

Pacific Mail Steamship Co.: General offices. 508

Pacific Mail Steamship Co.: General offices, 508 California St., San Francisco, Cal. J. H. Rosseter, vice-president and Daulton Mann, assistant general-manager.

W. A. Young, Jr., general passenger agent. Established in 1848 and operates under the American flag. Agencies in all the principal cities in the World. Operating from San Francisco to Honolulu, Yokohama, Kobe, Shanghai, Hongkong and Manila. From San Francisco to Manila, Saigon, Singapore, Calcutta and Colombo. From San Francisco to Balboa and Cristobal, Canal Zone via Manzanillo, Acapulco, Salina Cruz, Champerico, San Jose de Guatemala, La Libertad, La Union, Amapala, Corinto, San Juan del Sur and Puntarenas. Trans-Pacific line: New American steamers. S. S. Ecuador, 5,688 gross tons, 3,517 net tons; S. S. Venezuela, 5641 gross tons, 3444 net tons; S. S. Colombia, 5644 gross tons, 3448 net tons. Manila East India Service—American steamers: S. S. Santa Cruz, 5081 gross tons, 2984 net tons; S. S. Colusa, 5732 gross tons, 3622 net tons.

Mexico, Central America and Panama service: S. S. Mexico, Central America and Panama service: S. S. City of Para, 3,352 gross tons, 2,505 net tons; S. S. Newport, 2,735 gross tons, 1,806 net tons; S. S. Peru, 3,528 gross tons, 2,540 net tons; S. S. San Jose, 2,081 gross tons, 1,538 net tons; S. S. San Juan, 2,076 gross tons, 1,496 net tons; S. S. George W. Elder, 1,710 gross tons, 1,225 net tons. Sailings for the Orient and India approximately every 28 days. Sailings for Mexico, Central America and Panama approximately every 10 days. Head office address, 120

Broadway, New York,

Panama Pacific Line: Head office, New York, N. Y. Panama Pacific Line: Head office, New York, N. Y. Representatives in Coast cities. Passenger traffic manager, W. W. Jefferies, New York; general passenger agent, T. H. Larke, San Francisco, Cal.; Freight and operating agents, Swayne & Hoyt, San Francisco. District passenger agent in charge of Washington, Oregon, Idaho, British Columbia and Alaska, A. E. Disney, Railway Exchange Bldg., 619 Second Ave., Seattle, Wash. General agency for Southern California, G. N. Koeppel, at Los Angeles and San Diego. Operating between San Francisco and and San Diego. Operating between San Francisco and New York, calling at San Pedro. American built steamships. "Kroonland" and "Finland," 22,000 tons displacement, operating under the American flag. Sailing every 21 days from San Francisco and New York, calling at Los Angeles. The Panama Pacific Line is owned and operated by the International Mercantile Marine Co., which also operates the American Line, White Star Line, Atlantic Transport Line, Red Star Line, and White Star-Dominion Line, and has a company office in Seattle.

South America Pacific Line: A. O. Lindvig, Christiana, ship owner. B. Lindvig, general agent, 280 Battery St., San Francisco. Mexico, Central America, Colombia,

Ecuador, Peru and Chile.

Swayne & Hoyt Inc.: Local address, 430 Sansome St., San Francisco, Cal. Cable address, "Finance." Estab-St., San Francisco, Cal. Cable address, "Finance." Established 1850. Number of steamers owned, two; S. S. Alvarado and S. S. Yellowstone. Number of motorships owned, one. Ports to which vessels trade, S. S. Alvarado chartered on Atlantic coast; S. S. Yellowstone operated chartered on Atlantic coast; S. S. Yellowstone operated in lumber and general merchandise trade between San Francisco and Marshfield and North Bend, Oregon. S. S. Yellowstone sails regularly every ten days for Marshfield and North Bend, Ore., and return to San Francisco. Vessels lie at Pier No. 26, San Francisco, Cal. Gross tonnage owned, 3,720 tons. Size of largest vessel in gross tons, S. S. Alvarado, 2,052 gross tons. Agents for Panama Pacific Line, Oriental Pacific Line, Arrow Line.

The East Asiatic Co. Ltd. (General Agency): Local address, 310 Sansome St. Established in 1913. General agents of fleet of East Asiatic Co. and S. S. Co. Orient, Copenhagen. Ports to which vessels trade, Orient and return to Pacific, also Scandinavia, Pacific Coast and Orient. About monthly service. Gross tonnage owned, about 130,000 tons dead weight. Size of largest vessel in gross tons, about 5,700 tons. Head office address, The East Asiatic Co. Ltd., Copenhagen. Branch office addresses, New York, Valparaiso, Shanghai, Singapore, Bangkok. Agents for East Asiatic Co. Ltd., Copenhagen Steamship Company Orient, Copenhagen.

Toyo Kisen Kaisha (Oriental Steamship Co.): Entire third and fifth floors, 625 Market St. Telegraphic address, Toyokisen (A B C, 5th, Western Union, Scott's 10th and Bentleys). Established 1890. Number of steamers owned, 14. Vessels trade to San Francisco and all Oriental ports; San Francisco and all Mexican, Cen-

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tral American and South American ports on West Coast. San Francisco, Honolulu, Yokohama, Kobe, Nagasaki, Shanghai, Manila, Hongkong, San Francisco, San Pedro, Salina Cruz, Balboa (Panama), Callao, Arica, Iquique and Valparaiso, returning via San Francisco, Yokohama, Kobe, Moji, Hongkong, Honolulu. Regular sailings from San Francisco. Vessels lie at Piers 34, 36, 38. Gross tonnage owned 85,193. Size of largest vessel in gross tons, 13,398. Head office addresses: Yokohama, Kobe, Shanghai, Manila, Hongkong, San Francisco.

## Seattle

Alaska Steamship Co.: Local address, 410 Colman Bldg., Seattle, Wash. Service to Southeastern Alaska every six days. Service to Southwestern Alaska every six days. Service to Alaska Peninsula monthly during nine months of year. Service to Bering Sea points every twenty-eight days during five months of the year. Vessels lie at Pier 2 which is owned by the Northern Pacific Railway and operated by Alaska Steamship Co. Dock 770x120 feet, with 1400 feet berthing space. Warehouse 750x100 feet. Capacity 17,000 tons. Track capacity 18 cars. Adjustable slips. Electric crane and electric trucks capacity 25 tons.

slips. Electric crane and electric trucks, capacity 25 tons.

American Yukon Navigation Co.: Local address, 510 Alaska Bldg., Seattle. Established 1913. Number of steamers owned, 48 steamers, 60 barges. Vessels trade on Yukon River and tributaries between St. Michael, Alaska, and Dawson, Yukon Territory. No regular schedule maintained. Gross tonnage owned, 48,529. Size of largest vessel in gross tons, steamers Susie, Sarah and Hannah, each 1,211 tons gross. Head office address, 1919 Conway Bldg., Chicago, Ill. Branch offices, Skagway, Alaska, and St. Michael, Alaska. Agents for White Pass & Yukon

Route.

Border Line: Head offices, 1141-49 Henry Bldg., Seattle, Wash. Officers: G. W. Ninemire, President, Seattle, Wash.; K. J. Middleton, Vice-President and Treasurer, Seattle, Wash.; P. S. Newcomb, Manager, Seattle, Wash. Agencies—Seattle, Dodwell & Co. Ltd., 1141-49 Henry Bldg.; Tacoma, Dodwell & Co. Ltd., Tacoma Bldg.; Portland, Ore., Dodwell & Co. Ltd., 17 Concord Bldg.; San Francisco, Dodwell & Co. Ltd., 160 California St.; Vancouver, B. C., Dodwell & Co. Ltd., Elmont Bldg.; Nanaimo, B. C., M. C. Ironsides; Bellingham, Wash., W. H. Williams, 1251 Elk St. Vessels owned, with gross tonnage—S. S. Fulton, 605 gross, M. V. Wakena, 399 gross, concrete lighter, Hercules, and wooden lighters Aberdeen and Hoquiam. Service engaged in: General freighting business between Puget Sound and British Columbia ports. Terminal at Seattle: Pier 14, Dodwell Dock & Warehouse Co.

Canadian Pacific Railway Co.: Seattle branch, 608 Second Ave. Offices throughout the world. The company operates steamships on the Pacific and Atlantic Oceans. Trans-Atlantic service between Montreal, St. John's and Liverpool, Trans-Pacific service between Victoria, Vancouver and Yokohama, Nagasaki, Kobe, Shanghai, Hongkong, and Manila. Coastwise service between Victoria, Vancouver, Prince Rupert, Juneau, Wrangell, Ketchikan, and Skagway. Triangle run between Seattle, Victoria and Vancouver. Agents for Canadian Australasian line operating boats from Vancouver to Honolulu, Suva, New Zealand and Sydney. Trans-continental railway service between Montreal and Vancouver.

Charles R. McCormick Steamship Line: 109 Cherry St., Seattle, Wash. Operating a fleet of coastwise steamships running between Seattle, San Francisco, Los Angeles, and San Diego. Regular sailings once a week. The company owns seven boats, besides chartered boats.

pany owns seven boats, besides chartered boats.

Charles Nelson Co.: W. C. Dawson & Co., local agents, 503 Mutual Life Bldg., Seattle, Wash. Boats run between San Francisco, Seattle, and Tacoma, loading at Mukilteo and Port Angeles where the company's mills are established. Weekly sailings from Piers 9 and 10.

are established. Weekly sailings from Piers 9 and 10.

Dodwell & Co. Ltd.: Offices, Seattle, Washington, 1141-49 Henry Bldg; Tacoma, Wash., Tacoma Bldg.; Portland, Ore., 17 Concord Bldg.; San Francisco, Cal., 160 California St., Vancouver, B. C., Yorkshire Bldg., Victoria, B. C., Belmont Bldg., New York 161-3 Water St.

General steamship agents, iron, steel, flour, lumber, and canned salmon. Insurance agents representing fire, marine, automobile and liability insurance companies. General Agents: Border Line Transportation Co., Dodwell Dock & Warehouse Company of Seattle. Agents for the Ocean S. S. Co. Ltd., and China Mutual Steam Navigation Co. Ltd., "The Blue Funnel Line." Steamers of this line ply regularly between Seattle, Victoria, Vancouver, and China, Japan and Manila, and the United Kingdom via Seattle, Victoria, Vancouver and Panama. Steamers in these Oriental trades are of 10,000 tons gross register and in the European service are of 50,000 tons gross register. European consignees desiring information regarding the steamers or their cargo should apply to Liverpool, Alfred Holt Co., India Bldg., Water St., Glasgow, J. & A. Roxburgh, 14 St. Vincent Place; London, John Swire & Sons, 8 Billeter Square. Four of the vessels in the Oriental service viz. the "Tyndareus," "Ixion," "Talthybius," and "Protesilaus," have two-berth rooms for saloon passengers. The vessels carry large numbers of Chinese steerage passengers. They use the Terminal of the Dodwell Dock and Warehouse Co., Pier 14 at Seattle; the outer wharf at Victoria, B. C., and Evans, Coleman and Evans Dock at Vancouver, B. C.

Dollar Steamship Line: Local address, I. C. Smith Bldg., Seattle, Wash. Telegraphic address, Dollar. Number of steamers owned, three; number of steamers chartered, three. Vessels trade to Shanghai, Hongkong, Manila, Kobe, Yokohama. Departures are regular. Vessels lie at Great Northern Dock, regular berth. Gross tonnage owned, 15,178. Size of largest vessel in gross tons, 4,377. Head office address, 230 California St., San Francisco, Cal. Branch office at Shanghai, Hongkong, Manila, Hankow, Tientsin, Kobe, New York.

J. H. Fawkner & Co., Inc.: 220 Grand Trunk Dock, Seattle, Wash. Successors to Fawkner, Currie & Co., Inc., steamship agents, general brokers and commission agents. Agents for Gulf Mail Steamship Company, Seattle to South American ports. Chartering a specialty.

Frank Waterhouse & Co.: 629-648 Central Building, Seattle, Washington. President, Frank Waterhouse; vice-president, Neal H. Begley; treasurer, J. Richard Lane; secretary, R. D. Smalley. Branch offices: Tacoma, Vancouver, Victoria, New York. Steamship agencies: The Royal Mail Steam Packet Co. Regular services: The firm of Frank Waterhouse & Co. maintain regular Trans-Pacific services with chartered steamers. The lines consist of one to Vladivostok and Japan ports and another to Japanese ports, China, Philippines and Straits Settlements. Vladivostok service is temporarily suspended owing to state of affairs in Russia and the other service is maintained by monthly steamers. Sometimes the vessels are dispatched according to requirements of trade at shorter intervals. Coasting service: Puget Sound and British Columbia Freight Service, Central Building, Seattle. Managing owners of S. S. Morning Star and George E. Starr, operating between Seattle, Tacoma and way points to Vancouver, B. C. Terminals: Managers of Arlington Docks, Pier 5, double deck; length 341 feet; breadth, 100 feet; net storage, main floor, 20,298 square feet; second floor, 34,000 square feet; capacity per square foot, 600 lbs., and 400 lbs.; platform area, 20 feet width, 18,700 square feet; lowest depth of water, zero to 25 feet. Insurance department representing leading companies, fire, automobile and marine. Coal department: Supplies house and steam coal. The company has its own coal docks, and has standing arrangements for bunkering the largest steamers in Seattle and Tacoma. Telegraphic addresses: "Waterhouse" at all offices. Telegraphic codes: Watkins, Scott's, A. B. C. and A-1, Keegan's, Western Union and Whitelaw's.

A. M. Gillespie, Inc.: 713-719 Arctic Building, Seattle. A. M. Gillespie, President, A. W. Kinney, Vice-President, J. B. Mullally, Secretary-Treasurer. Operate regular monthly steamers from Puget Sound ports to Japan, China, Straits Settlements and Philippine Islands. They are general agents in America for the Yamashita Kisen Kaisha, Ltd., of Kobe, Japan and also represent A. O. Anderson & Company, Christiana, Norway, Andrew Weir & Company, London, England, Fredrick Tillett & Company, London, H. M. H. Namazee, Hongkong, China, M. H. Namazie, Singapore, Straits Settlements, etc., etc. They do

a general business as steamship operators, agents and brokers, marine insurance brokers and freight forwarders. Cable address; "Gillespie, Seattle."

Grand Trunk Pacific Coast Steamship Co.: Seattle city office, 917 Second Ave.; Victoria, Grand Trunk Pacific Dock; Vancouver city office, 527 Granville St. Manager of steamships, C. H. Nicholson, Vancouver, B. C., G. A. McNicholl, Asst. Gen. Freight and Psgr. Agent, Prince Rupert, B. C.; C. E. Jenney, General Agent Passenger Department, Vancouver, B. C.

Steamers Prince Rupert and Prince George, 3500 tons, handling freight and passengers, leaving Seattle Sunday and Wednesday nights for Victoria, Vancouver, Ocean Falls, Swanson Bay, Prince Rupert, Anyox, B. C. Connections made at Prince Rupert with Grand Trunk Pacific Railway. Steamship Prince John handling freight and passengers between Prince Rupert and Queen Charlotte Islands.

Humboldt Steamship Co.: 720 Second Ave., Seattle, Wash. Steamer S. S. Humboldt departs every eleven days for Alaska and way ports from Pier 7.

Mitsui Bussan Kaisha Ltd.: Local address, Mitsui & Co. Ltd., American Bank Bldg., Seattle. Telegraph, "Mitsui," Kobe, etc. About 18 vessels owned by head office with about 40 chartered vessels. Ports to which vessels trade, all over the world but chiefly Pacific Ocean and Oriental seas. Service is irregular. Vessels lie in Seattle chiefly at docks at Smith's Cove Terminal. So far as shipping business is concerned the head office is Freight Department, Mitsui Bussan Kaisha Ltd., Kobe, Japan. Branch offices, Mitsui, Bussan Kaisha Ltd., or Mitsui & Co., Ltd., all over the world. Agents at Seattle, James Griffiths & Sons.

Nippon Yusen Kaisha: Local address, Seattle branch, 409 Colman Bldg., 1st Ave. and Marion St. Telegraphic address, "Nippon." Established Oct. 1st, 1885. Number of steamers owned, 100. Vessels trade all over the world. Seattle-Japan line calls at Victoria, Yokohama, Kobe, Shanghai, Manila, Hongkong. Departures are regular. Vessels lie at G. N. Dock, Seattle. Gross tonnage owned, 459,299 gross tons. Size of largest vessel in gross tons, S. S. Fusohimi Maru and S. S. Suwa Maru, 10,940 gross tons. Head office address, Nippon Yusen Kaisha, Tokyo, Japan. Branch offices, Seattle, New York, London, Bombay, Calcutta, Hongkong, Shanghai, Kobe, Yokohama and all other principal ports of the world.

Osaka Shosen Kaisha: W. C. Dawson & Co., local agents, 503 Mutual Life Bldg., Seattle, Wash. Head office on the Pacific Coast in Tacoma, Wash. Offices New York, London, Bombay, Calcutta, Hongkong, Shanghai, Kobe, Yokohama and other principal ports of the world. Regular sailings every two weeks for Japan, China and the Philippine Islands. Total number of vessels, 148, while 12 are under construction. Vessels lie at Pier 6, and Milwaukee Ocean Sound Dock.

H. F. Ostrander: 812-18 Leary Bldg., Seattle. Cables "Ostrander," Seattle. Vessel owner; steamship agent and freight contractor—importer and exporter.

Pacific Steamship Co.: Tacoma, Wash., Perkins Bldg.; Seattle, Wash., 5th floor L. C. Smith Bldg.; San Francisco, Cal., 112 Market St.; Los Angeles, Cal., 624 South Spring St. H. F. Alexander, president; E. H. Hall, assistant to President; J. H. Coorer, assistant to president; A. F. Haines, vice president and general manager; F. M. Barry, assistant general manager; H. C. Cantelow, assistant general manager; E. G. McMicken, general passenger agent, A. F. Zipe, traffic manager, C. E. Flye, general freight agent. The company operates a fleet of vessels with a gross tonnage of 53,270 tons; net 31,814 tons. The company also owns the Pacific Lighterage Co. which operates the tug "Warrior" and two steel lighters, the "Commodore" and "Ensign," of 900 tons capacity each. This company operates steamships on the following routes: Puget Sound-California; frequent sailings on regular schedule between Seattle-Tacoma, Victoria and San Francisco, Los Angeles, San Diego, San Francisco, Southern California; frequent sailings on regular schedule between San Francisco and Los Angeles, San Diego, Puget Sound-Southeastern Alaska; frequent sailings on regular schedule

between Seattle-Tacoma and Ketchikan, Petersburg, Juneau, Sitka, Wrangel, Skagway and other way ports. Puget Sound-Southeastern Alaska; frequent sailings on regular schedule between Seattle-Tacoma and Ketchikan, Petersburg, Juneau, Yakutat, Katalla, Cordova, Valdez, Seldovia, Port Graham, Kodiak, Anchorage and other way ports. San Francisco-Eureka, Coos Bay-Portland; sailings every four days. San Francisco-Hueneme; frequent freight service on regular schedule between San Francisco and Santa Cruz, Monterey, Port San Luis, Santa Barbara, Ventura, Hueneme and other way ports. Puget Sound-Nome; regular sailings between Seattle-Tacoma and Nome during the season while navigation is open. San Francisco-Nome; regular sailings between San Francisco and Nome during the season, while navigation is open. Puget Sound-Singapore; regular sailings between Seattle-Tacoma and Singapore and other ports in the Orient.

Parr McCormick Steamship Co. of Seattle, Portland, San Francisco and San Pedro. Local address, Colman Bldg., Seattle, Wash. E. McConalogue, manager. Established 1915. Two steamers chartered. Ports to which vessels trade, San Francisco, San Pedro & San Diego. Approximately 7 sailings each month for both steamers. Gross tonnage owned, 897. Size of largest vessel in gross tons, 539. Head office address, Fife Bldg., San Francisco, Cal. Agents for Parr McCormick S. S. Line, E. J. Dodge Co., and Little River Steamship Co.

Royal Mail Steam Packet: Seattle agents, Frank Waterhouse & Co. The Royal Mail Steam Packet Company of London had before the war a regular service from European and Oriental ports to Pacific Coast. Large steamers of 16,000 tons capacity were used in this service, and the firm maintained monthly sailings between London, Antwerp, Rotterdam and Seattle, calling on the voyage at Suez, Colombo, Penang, Singapore, Manila, Hongkong, Shanghai, Nagasaki, Kobe, Yokohama, Victoria and Vancouver. The steamers berth in Seattle at the Arlington Dock, Pier 5. Services at the present suspended. Full particulars can be had from Frank Waterhouse & Company upon application.

Trans-Oceanic Co.: American Bank Bldg., Seattle, Wash. Ships agents and brokers. Offices in Seattle, San Francisco, Vancouver, New York and Chicago. Pacific Coast agents for the Ocean Transport Co. Ltd. of Kobe, Japan, operating regular steamer sailings from Seattle to Yokohama, Kobe, Singapore, Manila, both from Seattle and San Francisco. Three sailing per month. All vessels registered under A-1 Lloyds, using terminals of Union Pacific Railroad at Seattle for discharging and loading.

Uchida Steamship Co., Ltd., of Kobe, Japan:. 614 Leary Bldg., Seattle, Wash. The company owns eighteen steamers and two more are under construction in Yokohama.

W. C. Dawson & Co.: 503 Mutual Life Building. Agents for Charles Nelson Co. Weekly service between San Francisco and Seattle and Tacoma. Steamers dock at Virginia Street Dock & Warehouse Co. (Pier No. 10), Seattle; Baker Dock Co., Tacoma.

W. R. Grace & Co.: Local address, 8th floor, Hoge Bldg. Telegraphic address, "Grace." Ports to which vessels trade, South and Central America. Departures are irregular. Head office address, No. 7 Hanover Square, New York. Branch offices, San Francisco, Chicago, New Orleans, Mexico, Panama, Petrograd, London, Spain, Italy and all principal ports of South and Central America and Panama.

## Shanghai

Jardine, Matheson & Co. Ltd.: Local address, 27 The Bund. Telegraphic address, "Jardines." Vessels lie at Shanghai and Hongkew Wharf Co.'s wharves. Head office address, Hongkong. Branch office addresses, all China and Japan ports. Agents for Royal Mail Steam Packet Co., Indo-China S. N. Co. Ltd., Waterhouse Steamship Line, British India S. N. Co. Ltd.

The Swedish East Asiatic Co., Ltd., of Gothenburg, Sweden: (Shanghai agents, the Eckman Foreign Agencies, Ltd., 6, Kiangse Road). Started regular steamship service in 1917 from Gothenburg to India, China, and Japan,

and now own the following steamers: S. S. Sumatra, 9,200 tons dead weight; S. S. Ceylon, 900 tons dead weight; S. S. Japan, 9,000 tons dead weight; S. S. Nippon, 7,300 tons dead weight; S. S. Yeddo, 7,200 tons dead weight; S. S. Peking, 6,500 tons dead weight. This company also owns various smaller steamers used for the coastal trade in Scandinavia. Building several Motorships which are expected to be put into service shortly. Principal ports in the Far East, Singapore, Hongkong, Shanghai, Yokohama, Kobe, Shimonoseki and Dairen.

#### **Swatow**

Bradley & Co., Ltd.: Telegraphic address, Bradley, Swatow. Established 1860. Agents for the Osaka Shosen Swatow. Established 1860. Agents for the Osaka Shosen Kaisha. Ports to which vessels trade: Canton, Hongkong, Swatow, Amoy, Tamsui, Keelung. Departures regular. Vessels lie buoyed to O. S. K. or Bradley's Buoy. Gross' tonnage owned, 209,573 tons, by Osaka Shosen Kaisha. Size of largest vessel in gross tons to enter Swatow, Amakusa Maru, 2,526 tons. Head office addresse, I. Prince's Buildings, Hongkong. Branch office addresses, 2A Kiukiang Road, Shanghai; The Bund, Swatow. Agencies held at Swatow: Hongkong & Shanghai Banking Corporation, International Banking Corporation, P. & O. S. N. Co., Nippon Yusen Kaisha, Osaka Shosen Kaisha, Toyo Kisen Kaisha, Lloyds, China Fire Insurance Co. Ltd. Ltď.

Ki Heng Co.: Local address, Toi-It-Chin St. Telegraphic address, Cognehik. Established November, 1914 (before this doing a local trade only).

## Sydney

Australian Steamship Ltd. (Howard, Smith Ltd. managing agents): Local address, Equitable Bidgs., George St., Sydney. Telegraphic address, per Eastern Extension, "Howdsmith," per Reuters, "Serenareis." Number of steamers owned, 30. Vessels trade to all ports in Australia. Departures are regular. Vessels lie at company's tralia. Departures are regular. Vessels lie at company's wharves, foot of King St., Sydney. Gross tonnage owned, 91,300 tons. Size of largest vessel in gross tons, 8,000 tons. Head office address, 34-45 Market St., Melbourne. Branch offices at Newcastle, Brisbane, Maryborough, Rockhampton, McKay, Townsville, Cairns, Cooktown, Adelaide Port Pirie, Fremantle, Geelong, Port Arlington, London. Agencies held for Oceanic S. S. Co., Holt's Blue Funnel Line. Blue Funnel Line.

George A. Parkes: Local address, No. 10, Royal Exchange Bldg., Pitt and Bridge St. Telegraphic address, "Setaicossa." Established 1901. Vessels trade between New York and Australasia. Departures monthly. lie at Government Wharf. Agencies in main Australian and New Zealand ports. Agents for United States and Australasia S. S. Co.'s Line and general shipping and

commission merchant.

commission merchant.

Gilchrist, Watt & Sanderson Ltd.: Local address, 5 O'Connell St. Telegraphic address, "Valindra." Established 1845. Vessels trade to South Africa, U. K. and United States. Departures are regular to United Kingdom via Africa. Vessels lie at Central Wharf, Miller's Point. Size of largest vessel in gross tons, 15,000. Head office address, Sydney. Branch office addresses, Brisbane, Wills, Gilchrist & Sanderson Ltd.; Albany, Henry Wills & Co.; Perth and Fremantle, Geo. Wills & Co. Ltd.; London, George Wills & Sons Ltd. Agents for Holt's Blue Funnel Line, P. & O. Branch Service, Watts, Watts & Co., Elder, Dempster & Co. Ltd.

Henry Olsen & Co. Pty. Ltd.: Local address, 255A

Henry Olsen & Co. Pty. Ltd.: Local address, 255A George St. Telegraphic address, "Danish." Established 1900. Vessels trade to Scandinavian ports. Departures regular. Head office address, Melbourne, 524-6 Collins St. Branch office addresses, Capetown, Durban, Copenhagen and Stavanger. Agents for The East Asiatic Co. Ltd., Copenhagen; The Steamship Co. Orient Ltd.,

Copenhagen.

Huddart Parker Ltd.: Local address, George St., Sydney. Telegraphic address, Rempoli. Number of steamers owned, 21. Vessels trade to all Commonwealth ports and New Zealand. Departures are regular. Vessels lie at own wharves at Darling Harbor. Gross tonnage

owned 51,207 tons. Size of largest vessels in gross tons, 6.660 tons. Head office address, 464-466 Collins St., Melbourne. Branch offices and agencies at all the chief cities in Australia and New Zealand.

Orient Steam Navigation Co. Ltd.: Local address, 2-4-6 Spring St. Telegraphic address, Orient. Number of steamers owned, eight. Vessels trade to United Kingdom. Departures fortnightly. Vessels lie at Circular Quay. Gross tonnage owned, 93,509. Size of largest vessel in gross tons, 15,000. Head office address, 13 Fenchurch Ave., London, E. C. Branch office addresses, Melbourne, Exercise the groups at Brisbone, Adalaide Hobert Fremantle, Perth; agents at Brisbane, Adelaide, Hobart, Agents for Barber Line, New York.

Agents for Barber Line, New York.

P. & O. S. N. Co. (Macdonald, Hamilton & Co., agents): Local address, 63 Pitt St. Telegraphic address, Peninsular. Established, 1840. Number of steamers owned, 58. Vessels trade between Australia, India, China, Japan, South Africa and United Kingdom. Departures are regular. Vessels lie at P. & O. S. N. Co. Circular Quay. Gross tonnage owned, 501,924. Size of largest vessels in gross tons, 13,800. Head office address, 122 Leadenhall St., London, E. C. Branch office addresses: Macdonald, Hamilton & Co., Perth, West Australia; Macdonald, Hamilton & Co., Fremantle, West Australia.

Royal Packet Navigation Co. (head office for Australasia for Koninklyke Paketvaart Maatshappy, Batavia). Local address, 56 Pitt St. Telegraphic address, "Paketvaart." Established 1891 at Amsterdam and 1908 in Australasia. Number of steamers owned, 93. Vessels trade to Melbourne, Sydney, Brisbane, Townsville, Port Moresby, Darwin, Macassar, Soerabaia, Semarang and Batavia, connecting with 45 services traversing throughout the Netherlands, East Indian Archipelago. Regular monthly service trading between Australian ports and Java and vice versa. Vessels lie at Dalgety's wharves. Millers Gross tonnage owned, 164,718 tons. Size of largest vessel in gross tons, 5,658 tons. Head office address, Amsterdam, (Holland), Batavia, (Java). Branch office address, Penang, Singapore, Soerabaia, Semarang, Batavia, Macassar, etc. Agents for Rotterdam Lloyd Mail Line, Java Royal Packet Navigation Co. (head office for Australsar, etc. Agents for Rotterdam Lloyd Mail Line, Java Bengal Line, Java-China-Japan Line,

R. Towns & Co.: Local address, 16 Loftus St. Telegraphic address, "Towns." Established 1844. Vessels trade from Sydney and Newcastle to New Caledonia every 4 weeks. Agents for Union Commerciale et de Navigation Caledonienne Noumea.

Scott Henderson & Co.: Local address, 60 Margaret St. Telegraphic address, "Tenacious." Established 1845. Departures are regular. Agents for Canada West Coast Navigation Co. Ltd., Standard Bank Bldg., Vancouver,

Scott Fell & Co. Interstate Steamship Co.: Local address, 251 George St. Telegraphic address, "Fellscott." Established 30 years. Vessels trade to Melbourne, Adelaide, Port Pirie, Newcastle, Devonport, (Tas.), Sydney, Fremantle, also foreign ports. Departures regular in coasting. Vessels lie at Pyrmont Dock. Branch office address, Scott St., Melbourne; Port Pirie and Adelaide, South Australia.

The McArthur Shipping & Agency Co. Ltd.: Local address, 15 Macquarie Place. Telegraphic address, "Nosreffej." Successors to W. & A. McArthur Ltd., established 1875. Agents for Clan Line Steamers Ltd., Luckenbach S. S. Co., Gulf Line Ltd., Nautilus S. S. Co. Ltd. Ports to which vessels trade, Clan Line, Gulf Line and Nautilus C. S. Co. to United Kingdom: Luckenbach Line to United to which vessels trade, Clan Line, Gulf Line and Nautilus S. S. Co. to United Kingdom; Luckenbach Line to United States. Departures are regular. Vessels lie at Browns Wharf, Wooloomooloo. Gross tonnage owned, Clan Line, 300,000 tons. Size of largest vessel in gross tons, Clan Macarthur, 10,000 tons; Julia Luckenbach, 14,000 tons. Head office address, Clan Line Steamers Ltd., 2 St. Mary Ave., London, E. C., Luckenbach S. S. Co., 44 Whitehall St., New York; Gulf Line, London; Nautilus S. S. Co., Sundarland, England. Sunderland, England.

Union S. S. Co. of New Zealand: Local address, 259 eorge St. Telegraphic address "Stonewall." Established 1875. Number of steamers owned, 72. Vessels trade to Australian, Tasmanian, New Zealand coastal ports, Fiji, Hawaii, Tonga, Samoa, Vancouver, B. C., Rarotonga,

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Tahiti, San Francisco, Calcutta and United Kingdom. Vessels lie at Darling Harbor, Sydney. Gross tonnage owned, 230,221. Size of largest vessel in gross tons, 13,415. Head office Dunedin; D. A. Aiken, general manager; A. W. Wheeler, acting secretary; Traffic Department, J. H. C. Bond, general traffic manager; R. McK. McLennan, Trans-Pacific and Island Services. New Zealand branches and agencies—Auckland, Blenheim, Picton, Christchurch, Lyttelton, Dunedin, Gisborne, Greymouth, Hokitika, Invercargill, Bluff, Napier, Nelson, New Plymouth, Oamaru, Timaru, Wellington, Westport, Wanganui. Australian branches—Melbourne, Victoria; Newcastle and Sydney, New South Wales; Burnie, Devonport, Hobart, Launceston and Strahan, Tasmania. Australian agencies—Adelaide, South Australia; Brisbane, Queensland; Fremantle, West Australia. South Sea Island branches and agencies—Suva, Lautoka, Levuka, Apia, Samoa; Nukulofa, Haapai, Vavau, Rarotonga, Papeete, Tahiti. Foreign agents—Calcutta, Singapore, Batavia, Semarang, Soerabaia, Cape Town, Durban, Honolulu, Vancouver, San Francisco. London office, 5 Fen Court, Fenchurch St., E. C. Agents for Canadian Australasian Royal Mail Line.

W. F. Deucher & Co.: Local address, 12 and 14 Loftus St. Telegraphic address, "Glencis." Established, 1st July, 1907. Head office address, Sydney. London agent, G. Sturgeon, 24 Eastcheap, E. C. 3. Agents for Ellerman & Bucknall Steamship Co., London; G. Sturgeon, Esq., London; Campagnie Francaise de Marine and de Commerce, Paris; Devitt & Moore's sailing vessels.

#### **Tacoma**

Osaka Shosen Kaisha: 1017 A street, Tacoma, Wash. Telegraphic address: "Shosen." Established 1883, American line in 1909. Number of steamers owned, 190; 10 steamers on American Line. Vessels trade to Yokohama, Moji, Shanghai, Hongkong, Nagasaki, Manila. Six regular departures. Direct line to Singapore; two sailings. Vessels lie at the C. M. & St. P. Docks, Tacoma and Seattle. Gross tonnage owned, 452,060. Largest vessel is 10,000 gross tons. Head office, Osaka, Japan. Branch offices at all pricinal ports in the Orient.

all pricipal ports in the Orient.

Garland Steamship Co.: J. T. Steeb & Co., 523-30
Tacoma Bldg., Tacoma, Wash., general agents. Home office, New York City. Three vessels direct Tacoma, to Shanghai; Grayson, 2.526 gross registered tons; Justin, 2,321 tons and Javary, 1,249 tons. Sailings every 25 days.

#### **Tientsin**

Jardine, Matheson & Co. Ltd., general managers Indo-China S. N. Co.; Local address, No. 6, The Bund. Telegraphic address, "Inchcoy," Tientsin or "Jardines," Tientsin. Number of steamers owned, 41. Vessels trade to Shanghai, Hongkong, Canton. and nearly all ports on China coast, Japan, Straits and Calcutta, Manila, Yangszte Valley. Vessels do not run on schedule at the present time. Head office address, Hongkong. Branch office addresses. Amoy. Canton, Chefoo, Chinkiang, Dairen, Foochow, Ichang, Hankow, Hongkong, Kuikiang, Kobe, Nagasaki, Nanking. Newchwang, Shanghai, Swatow, Tsingtao, Wei Hai Wei, Wuhu, Yokohama, Calcutta, Singapore, Penang, Manila. Agents for P. & O. C. P. O. S. Ltd., Shire Line, Glen Line.

#### Tokyo

Toyo Kisen Kaisha (Oriental Steamship Company) was founded 1890 by Soichiro Asano for service between Yokohama and San Francisco At the present time it operates the finest passenger steamers in its trans-Pacific service between San Francisco and the Orient (North American Line) as well as a number of great freight carriers, which have accommodations for first, second and third-class passengers, on its South American line, operating between the west coast of South America (as far south as Valparaiso) and the Orient, touching at Central America, Mexican and North American ports en route.

The passenger fleet of the North American line in service between San Francisco, Honolulu, Yokohama, Kobe, Nagasaki, Manila, Hongkong and Shanghai, consists of the following steamships:

		Gr. Tons	Dispt.
Tenyo	Maru	 13,398	22,000
Shinyo	Maru	 13,039	22,000
Korea	Maru	 11,809	20,000
Siberia	Maru	 11,785	20,000
Nippon	Maru	 5,919	11,000
Persia	Maru	 4,380	9,000

The Shinyo and Tenyo Maru are sister ships of 22,000 tons displacement. They are driven by triple screw turbine engines which account for an utter absence of vibration and a speed of 21 knots per hour.

The Korea Maru and Siberia Maru are somewhat smaller than the above mentioned, being of approximately 20,000 tons displacement and are driven by twin screw engines. They were built especially for the trans-Pacific trade.

The Nippon Maru, 11,000 tons and the Persia Maru, 9,000 tons, are called the intermediate steamships and have accommodations for 110 first-class passengers. The passenger accommodations are amidships, all rooms being located on the upper and bridge decks, thus affording plenty of light and ventilation. One class of saloon passengers only (first-class) is carried. On these ships they have all the privileges of the steamer heretofore accorded to the passengers of steamers carrying first-class passengers, including dining room, music room, promenade decks, etc.

In addition to these steamers Toyo Kisen Kaisha has a number of vessels in the freight service across the Pacific either under their direct ownership or charter. These range from 4 to 10 according to the number.

Toyo Kisen Kaisha Trans-Pacific Service to South America: In connection with Trans-pacific service to North America, Toyo Kisen Kaisha also operates a line of steamers from Hongkong to Valparaiso (South America) via Moji; Kobe, Yokohama, Honolulu, San Francisco, San Pedro (Los Angeles), Salina Cruz, Balboa (Ancon) Callao, Arica and Iquique.

The steamers on this line are in through round-trip service between China and Japan ports and Southern Chile via San Francisco and west coast ports of North and South America. Steamers do not call at San Pedro on their return voyage to the Orient. These steamers are all new and of the latest type and saloon accommodations are offered on them at reduced rates.

The Anyo Maru was built in 1913 at the Mitsubishi Dockyard and Engine Works, Nagasaki, and has a displacement of 18,500 tons. It is 466 feet in length, 58 feet in breadth, with a depth of 38 feet. The Anyo Maru has accommodations for first, second and third class passengers.

- S. S. Kiyo Maru is of 17,200 tons displacement. It was built in 1910 in the Mitsubishi Dockyard and Engine Works at Nagasaki. It is 470 feet long, 55 feet beam and 31 feet in depth. There are accommodations for a limited number of first-class passengers and for a large number of second and third class.
- S. S. Seiyo Maru is 14,000 tons displacement and was built by Russell & Co., Port Glasgow, in 1913. It has accommodations for first, second and third class passengers. It is 404 feet in length, with a breadth of 52 feet.

### Tsingtao

Butterfield & Swire: Telegraphic address, "Swire." Head office address, Shanghai. Branch office addresses, Hongkong, China and Japan. Agents for China Navigation Co. Ltd., China Mutual Steam Nav. Co. Ltd., Taikoo Sugar Refining Co. Ltd., Taikoo Dockyard & Engineering Co. of Hongkong Ltd., Union Insurance Society of Canton Ltd.

Cornabe, Eckford & Co.: Telegraphic address, Corn-St. Telegraphic address, "Jardines." Head office address, Chefoo, Shantung, China. Branch office addresses, Dairen, South Manchuria, China; Wei Hai Wei, Shantung, China, Tsingtao, Shantung China. Agents for Toyo Kisen Kaisha, China Mail S. S. Co., Dodwell Line of Steamers, P. & O. S. Nav. Co., Cie des M. M., E. & O. S. S. Co., Glen Line of Steamers, Garland Steamship Co

Jardine, Matheson & Co. Ltd.: Local address, Honan St. Telegraphic address, "Jardines." Head office address, Hongkong. Branch offices in all principal ports in China and Japan, also New York. London representatives: Messrs. Matheson & Co. Ltd., 3 Lombard St., E. C. Agents for Indo-China Steam Navigation Co. Ltd., The Canadian Pacific Ocean Services Ltd., The Royal Mail Steam Packet Co., Waterhouse Steamship Line, China Sugar Refining Co. Ltd., Canton Insurance Office, Ltd., Hongkong Fire Insurance Co. Ltd. Alliance Assurance Co. Ltd., etc. Insurance Co. Ltd., Alliance Assurance Co. Ltd., etc., etc.

## Valparaiso

Artigas Riofrio & Co.: Local address, Emazuiz 724, Casilla 658. Telegraphic address, "Artigasrio." Established 1890. One steamer, "Lircay," owned, which trades from Valparaiso to Iquique and intermediate ports.

Banquez & Co.: Local address, Blanco 636, Casilla 57. Telegraphic address, "Pisagua." Established 1915. Owners of two tugs and three steamships, also four sailing vessels. Vessels trade to coast of Chile and also foreign ports. Gross tonnage owned, 11,000 tons. Size of largest vessel in gross tons, 4,000 tons. Head office address. Blanco 636.

Compania Carbonifera i de Fundacion Schwager: Telegraphic address, "Schwager." Established 1892. Six steamers owned. Vessels trade to Coronel and to other Chilian ports. Gross tonnage owned, 5,500. Head office address. Schwager Bldg., Valparaiso. Branch office address, Minas Schwager, Coronel.

Compania Sud Americana de Vapores: Local address, Calle Blanco No. 695. Telegraphic address, "Aguila," Valparaiso. Established 1872. Nine steamers owned. Stops at all ports of west coast of South America. Weekly sailings from Valparaiso. Gross tonnage owned, 21,987 tons. Size of largest vessel in gross tons, 2,443 tons. Head office address, Casilla No. 933, Valparaiso. Company has agencies in all ports of South

D. Escobar & Co.: Local address, Casilla 685, Blanco St., 343. One steamer owned. Vessel trades to all ports from Coronel (Chile) to Callao (Peru). Departures every eight days. Gross tonnage 1,790.

Duncan Fox & Co.: Local address, Calle Blanco 795. Telegraphic address, "Zigzag." Established 1846. Head office address, Duncan Fox Co., 29 Great St., Helens, London. Branch office addresses, Duncan Fox & Co., Concepcion, Talcahuano, Penco, Antofagasta, Valdivia, Parrai, Lautaro, Tulca, Chillan, Santiago, Oruro, La Paz, Payta, Pimra, Callao, Lima, Manchester, Liverpool. Agents for Braun & Blanchard Line, Lamport & Holt Line, Royal Dutch West India Mail, Menendez Behety Line, Sociedad Co. Socd. Importadora y Exportadora de la Patagonia C. H. Smith Line.

Elie Poisson: Local address, Blanco 1183, Casilla 272. Telegraphic address, "Nossiop." Established 1893. Agent for Cie. Generale Transatlantique, 6 Rue Auber, Paris; Cie, de Navegation Sud Atlantique, 9 Place de la Madeleine, Paris; steamers from Buenos Aires to France and from New York to France; also from Colon to France.

Enrique Court A.: Local address, Casilla 691. Calle Blanco 627. Telegraphic address, "Court." Established 1912. Two steamers owned, which vessels trade from Iquique to Canal and intermediate ports. Departures irregular. Size of largest vessel is 300 gross tons. Head office address, Valparaiso. Agents for steamers Lala and Olga owned by Germaine y Sienna; also steamer Richard Orchard owned by Ricardo & Orchard Co., as well as the schooner Covita owned by Munoz & Co. schooner Goyita, owned by Munoz & Co.

Etiheguay Onfray & Cia.: Local address, Casilla 199, Calle Blanco 815. Telegraphic address, Etiheguay. Established 1915. Two steamers owned, which trade from Valparaiso to Iquique with departures each 10 days. Gross tonnage owned, 2,191. Size of largest vessel in gross tons, 1,102, "Coronel." Head office address, Valparaiso. Branch office addresses, Coquimbo, Caldero, Canizals, Chanaral, Taltal, Antofagasta, Mejillones, Tocopilla, Iquique.

Geo. C. Kenrick & Co.: Local address, Calle Blanco No. 729 (P. O. Box 495). Telegraphic address, "Kenrick," Valparaiso. Established 1901. Head office address. Valparaiso (Chile), Calla Blanco No. 729 (P. O. Box 495). Branch office addresses, Iquique (Chile), Calle Bolivar (P. O. Box 661). General agents for International Mercantile Marine Lines, New York; United Fruit Co., Elders & Fyffes Ltd., Compania Peruana de Vapores y Dique del Callao (Peru), Andrew Weir & Co., London and Glasgow, owners of the Indian-Chilean Line and other lines; Lawther Latta & Co. London Nitrate Producers Steamship ther, Latta & Co., London, Nitrate Producers Steamship Co.; also general agents in Chile for London Assurance Corporation, and the following Chilian collieries, Compania Carbonifera "Los Rios de Curanilahue" de Lebu; Comunidad Minas de Carbon Porvenir-Lebu, Lebu,

Gibbs & Co.: Local address. Cochrane, corner Veriola. Telegraphic address, Antipodean. Act as agents for New York and South American Line. Vessels trade from New York and South American Line. Vessels trade from New York to West Coast of South America. Monthly sailings. Head office address, Antony Gibbs & Sons, London. Branch office addresses: Valparaiso, Iquique, Antofagasta, Santiago, Mejillones, Concepcion, Talcahuano, Towre, Mulchen, Tamuco, Victoria, Traiquen, Lautaro.

Gonzalez Soffia & Co.: Local address, Bianco 681, Casilla 469. Telegraphic address, "Gonsoff." Established 1892. Two steamers: Taltal, 1,000 tons. Chorriths, 250 tons, owned, with a third of 350 tons under construction.

rons, owned, with a third of 350 tons under construction. Ports to which vessels trade, Coquimbo, Taltal, Antofagasta, Iquique, Catele, Buena Pisagua, Arica. Vessels lie at government buoys. Gross tonnage owned, 1,250. Size of largest vessel in gross tons, 1,000. Branch office addresses, Coquimbo, Antofagasta, Iquique, Arica, Santiago.

Lota & Coronel: Local address, Calle Blanco N. 535, P. O. Box 945. Telegraphic address, Esplotador. Established 1852. Number of steamers owned, five. Vessels trade to all the coast of Chile. Departures are regular. Gross tonnage owned, 10,500 tons. Size of largest vessel in gross tons, 3,600 tons. Head office address, Valparaiso. Branch office address, Administrador de la Ca

Nautilus S. S. Co. Ltd. (Gulf Line): Local address, Calle Blanco 903, Casilla 895. Telegraphic address, "Gulf." Established 1886. Twelve steamers owned. Vessels trade to west coast of South America from Great Britain. Gross tonnage owned, 45,000. Size of largest vessel in gross tons, 5,400. Head office address, 45 Leadenhall St., London. Branch offices at all ports on this coast. Allardice & Co. are Valparaiso agents.

Pacific Steam Navigation Co.: Local address, Calle Blanco, Casilla 934. Telegraphic address, "Pacific," Valparaiso. Established 1840. Thirty-six steamers owned, including three under construction. Vessels trade to all including three under construction. Vessels trade to all important ports of South America (east and west coast). Regular services of mail steamers. Vessels lie at Fiscal Mole for discharge of custom house cargo, in roadstead otherwise. Gross tonnage owned, 266,403 tons. Size of largest vessel in gross tons, 15,678 tons. Head office address, 31 James St., Liverpool, England. Branch offices in nearly all ports on Pacific and Atlantic sides. Agents for P. M. S. P., Union Castle Line, Elder, Dempster Line Line.

R. W. James & Co.: Local address, Casilla No. 1066, office at Calle Blanco 983. Telegraphic address, "Floracode." Established 1908. Owners of one steamer, two tugs and 30 lighters. Vessels trade to west coast, Chile, between Valparaiso, Iquique, with calls at chief and intermediate ports. Regular departure every fortnight. Vessels lie at own mooring buoys, Valparaiso Bay: Gross tonnage owned, 2,700 tons. Head office address, Valparaiso, Casilla No. 1066. Branch office address, Antofagasta, Casilla No. 865. Agents for the Nelson Steam Navigation Co., London.

Sociedad Gaston, Williams & Wigmore Ltd.: Local address, 955-961 Calle Blanco, Casilla 122. Telegraphic address, "Gastonorge," Valparaiso. Established 1916. Fifteen steamers owned. Vessels trade to west coast of South America and United States; ramifications throughout the world. No fixed schedule at the present time. Gross tonnage owned, about 50,000 tons. Size of largest vessel in gross tons, Lord Dufferin, 7,500 tons. Head, office

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address, Gaston, Williams & Wigmore, Inc., 120 Broadway, N. Y. Branch offices at London, Paris, Rome, Madrid, Lisbon, Petrograd, Havana, Vladivostok, Capetown, Tokyo and Shanghai. Agents in all ports of the west coast

of South America.

The East Asiatic Company Ltd. (Compania Danesa de Vapores): Local address, Calle Blanco 795, Casilla 353. Telegraphic address, "Occidente." Agency es-Owners of 16 Diesel motorships with 22 under construction, to be delivered before 1921. The company has direct regular lines from Scandinavia to Siam, China, Japan, Australia, South Africa, North and South Pacific. On the South Pacific Coast the ships generally call at Guayaquil, Callao, Mollendo, Arica, Iquique, Antofagasta, Coquimbo, Valparaiso, Talcahuano. At present sailings are irregular. Vessels lie at Government buoys. Gross tonnage owned, 67,280 tons. Size of largest vessel in gross tons, 5,569 ton, motorship Chile. Head office address, Halbergsgade 2, Copenhagen. Branch office addresses: London office, 158 Fenchurch St., E. C.; San Francisco, 310 Sansome St.; New York, 60 Wall St. Branches at Bangkok, Singapore, Shanghai, Hankow, Vladivostok, Durban, etc. Agencies held, Steamship Company Orient, Ltd., Copenhagen, whose ships are sailing on the lines of The East Asiatic Co. in combination with their vessels. They own 10 steamers. tablished November, 1914; head office established, 1897. own 10 steamers.

own 10 steamers.

Victor Valck & Cia.: Local address, Casilla 1432.
Telegraphic address, "Vivalck." Established 1909.
Steamer Aranco owned, which trades between Ancud and Arica. Gross tonnage owned, 1,829. Head office address, Valparaiso, Casilla 1432.

Viegand & Co.: Local address, Casilla 23 Cochrane 691, Blanco 686. Telegraphic address, "Viegand." Established 1890. Three steamers owned which trade from Valparaiso to Arica and intermediate ports. Departures are regular. Gross tonnage owned, 3,800.

from Valparaiso to Arica and intermediate ports. Departures are regular. Gross tonnage owned, 3,800. Size of largest vessel in gross tons, 3,000. Head office address, Valparaiso. Branch office address, Huasco. Wessel, Duval & Co.: Local address, Calle Cochrane 567, Casilla 926. Telegraphic address, Hemenway. Established about 1830. Three chartered steamers. Vessels trade from New York to all ports in Peru and Chile. Departure, about once a month. Head office address, Valparaiso. Branch office addresses, New York, Santiago, Concepcion, Antofagasta and Talcahuano. Agents for American Smelting & Refining Co. steamers.

## Vancouver

Canadian Australasian Royal Mail Line (Union Steamship Co. of New Zealand Ltd., managing agents): Local address, 440 Seymour St., Vancouver, B. C., Telegraphic address, Canadian Australasian Royal Mail Line, Vancouver, B. C. Established 1875. Number of steamers owned, 72. Own no sailers, but charter occasionally. Vessels trade between Vancouver and Honolulu, T. H., Suva, Fiji, Auckland, N. Z. and Sydney, N. S. W. (pass-Suva, Fiji, Auckland, N. Z. and Sydney, N. S. W. (passenger ships). Cargo steamers at intervals to ports in New Zealand and Australia, according to demand. Departures are regular. Vessels lie at C. P. R. Dock. Gross tonnage owned, 230,221. Size of largest vessel in gross tons, 13,415. Head office address for Canada, 440 Seymour St., Vancouver, B. C. Canadian Robert Dollar Co. Ltd.: Local address, 510 Hastings W. Telephone, Seymour 8680. Number of steamers owned, three; also have two boats in service under charter. Vessels trade to Vladivostok, China and Japan. Departures are regular, monthly. Vessels lie at

under charter. Vessels trade to Vladivostok, China and Japan. Departures are regular, monthly. Vessels lie at Great Northern Dock. Gross tonnage owned and operated, 20,408. Size of largest vessel in gross tons, 4,329. Head office address, Vancouver, B. C.

Coast Steamship Co., Ltd.: Local address, "Coast-ship," Vancouver, B. C. Telegraphic address, "Coast-ship," Vancouver, B. C. Established 1906, reorganized 1917. Number of steamers owned, three. Vessels trade to British Columbia and Puget Sound waters being points. to British Columbia and Puget Sound waters, being points on east coast of Vancouver Island, northern B. C. ports and canneries, Seattle, Tacoma, etc. Departures as business offers. Vessels lie at Evans Coleman Dock, Vancouver, B. C. Gross tonnage, 723 tons. Size of largest vessel in gross tons, steamship "Celtic," 239 tons. J. T. Steeb & Co., agents at Seattle and Tacoma.

Frank Waterhouse & Company of Canada, Limited: Head office, Rogers Bldg., Vancouver, B. C. Telegraphic address "Waterhouse." President, Frank Waterhouse; Vice-President, Neal H. Begley; Secretary, R. V. Ross; Treasurer, J. R. Lane. Agents Frank Waterhouse & Company and Royal Mail Steam Packet Company's trans-

pany and Royal Mail Steam Packet Company's trans-Pacific service. Owners and operators three freighters in B. C. Coast service; Marine Insurance; Bunker Agents.

C. Gardner Johnson & Co.: Local address, Johnson Wharf. Telegraphic address, Gardner, Vancouver. Established 1885. Agents for Osaka Shosen Kaisha and East Asiatic Co., Osaka Shosen Kaisha sailings are regular, East Asiatic Co. irregular. Vessels lie at Johnson Wharf.

Wharf.
Dollar Steamship Line: Local address, 1112 Standard
Bank Bldg. Telegraphic address, Dollar. Number of
steamers owned, four; number of steamers chartered,
three. Vessels trade to Vladivostok, Shanghai, Hongkong, Manila, Kobe, Yokohama. Departures are regular.
Vessels lie at Great Northern Dock, regular berth. Gross
tonnage owned, 15,178. Size of largest vessel in gross
tons, 4,377. Head office address, 230 California St., San
Francisco, Cal. Branch offices at Shanghai, Hongkong,
Manila, Hankow, Tientsin, Kobe, New York.

Grand Trunk Pacific Steamship Co., Ltd.: Local address, Grand Trunk Pacific Dock. Telegraphic address: Nicoltrunk. Established 1910. Number of steamers owned, Nicotrunk. Established 1910, Number of steamers owned, four. Ports to which vessels trade. Seattle, Victoria, Vancouver, Prince Rupert, and Southeastern Alaska; also Queen Charlotte Islands, Swanson Bay, Ocean Falls, and way ports. Departures regular. Vessels lie at G. T. P. Dock. Gross tonnage owned, 8,670. Size of largest vessel in gross tons, "Prince Rupert," 3,379.26 gross tons. Branch offices at all principal Coast ports.

The Canadian Pacific Ocean Services, Ltd.: Local address, Canadian Pacific Railway Station. Telegraphic address, "Marsu," Vancouver. Incorporated January 1, 1916. Number of steamers owned (Pacific Fleet), four. Ports to which vessels trade: Vancouver to Hongkong, via Victoria, Yokohama, Kobe, Nagasaki, Shanghai and Manila. Departures regular. Vessels lie at Pier A (section 2), and Pier D. Gross tonnage owned, 45,820. Size of largest vessel in gross tons, 16,908. Head office address, 8 Waterloo Place, London, England. Branch offices at all Canadian Pacific Railway offices.

Union Steamship Co. of British Columbia, Ltd.: Local address, foot of Carrol St., Vancouver, B. C. Telegraphic address, "Unionford." Number of steamers owned, 10. Vessels trade to all Northern British Columbia ports. Departures are regular and daily. Vessels lie at Union Wharf, foot of Carrol St. Gross tonnage owned, 6,635. Size of largest vessel in gross tons, (Camosun), 1,369 tons. Head office address, Foot of Carroll St., Vancouver, B. C. Branch office addresses, agencies at 1003 Government St., Victoria, B. C., and at Second Ave., Prince Rupert, B. C Agencies held, J H. Welsford & Co., Ltd., 17 Water St., Liverpool, England.

## Victoria, B. C.

Canadian Pacific Railway Co. British Columbia Coast Service: Local address, Victoria, B. C. Number of vessels owned, 17 steamers, 3 tugs, 6 barges. Vessels trade between British Columbia Coast ports, Puget Sound trade between British Columbia Coast ports, Puget Sound and Alaska. Departures are regular as per published schedule. Vessels lie at B. C. C. Service Dock, Victoria; Canadian Pacific Dock, Vancouver; Pier 1, Seattle. Gross tonnage owned, 41,023. Size of largest vessel in gross tons, 6,000 tons. Head office address, Victoria, B. C. Branch office addresses: Canadian Pacific Railway, Vancouver, Nanaimo, Seattle, Prince Rupert, Ketchikan, Juneau, Skagway.

## Dry Measure

2 pints ..........1 quart 8 quarts .......1 peck 4 pecks .....l bushel 36 bushels ....l chaldron

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. "	Victoria	750	3.12	3.3	
"	Seattle	804	3.18	3.9	
<i>u</i>	Tacoma	826	3.20	3.11	
u u	Yokohama	4520	20.23	18.20	
Tacoma	Victoria	92	. 10	.9	
"	Vancouver	155	.18	. 16	
u	Seattle	24	.3	.21	
Seattle	Victoria	72	.8	.71	
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· ·	Port Townsend	40	41	.4	
Portland	Yokohama	4309	20.8	18.7	Direct
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# Ships Operating via Panama Canal

According to the Panama Canal Record the lines which have established regular or approximately regular service through the Panama Canal since the resumption of traffic last April include:

From the Atlantic terminus to South and Central America: The Pacific Steam Navigation Company has services from Cristobal to west coast ports as far south as Valparaiso and Coronel and as far north as San Jose de Guatemala, calling at the principal way ports. Sailings for the Central American ports to the north are monthly. Sailings for Tumaco and Ecuador ports, as far as Guayaquil, are every two weeks; sailings to Valparaiso via Chilean and Peruvian ports are fortnightly; and a service between Cristobal and Buenaventura and Tumaco has a sailing every three weeks.

The South American Steamship Company (Chilean Line) maintains practically a weekly service between Cristobal and nearly all west coast ports as far south as

Talcahuano.

The Peruvian Steamship and Dock Company of Callao (Peruvian Line) maintains a service between Cristobal and Ecuadorian and Peruvian ports, going as far south as Mollendo and making its principal calls on the way at Guayaquil, Paita, Eten, Pacasmayo, Salaverry, Callao, and southern ports. The line has sailings each way once a week. Its ships arrive at and sail from Cristobal every Monday.

The Colombian Maritime Steamship Company, Limited, operates a vessel in regular service between Cristobal and Buenaventura, making about two round

vovages a month.

All of the lines named above carry both passengers and

cargo.

The steamship Izabel, operated by the Empresa de Transportes Maritimos, makes a round voyage between Cristobal and Puntarenas, Costa Rica, with cargo only, about every three weeks.

From the Atlantic terminus to Central and North America: The Pacific Mail Steamship Company is operating a line between Cristobal and San Francisco, with a sailing each way about every ten days. Calls are made at ports of Central America and Mexico on the way, and passengers are carried.

Between the Atlantic coast of the United States and the west coast of Central America: The New York & Cuba Mail Steamship Company (Ward Line) operates a freight and passenger service through the Canal between New York and west coast ports of Central America and Salina Cruz, Mexico. The ships discharge and load cargo at Cristobal. Sailings are every three weeks in each direction. The Jalisco and the Mexico carry cargo and passengers, the Manzanillo cargo only.

From the Atlantic coast of the United States to the Pacific coast of South America: This is the route of heaviest traffic. Many of the vessels plying over it are in the nitrate trade and used exclusively by charterers; the following commercial lines maintain fairly regular services:

The Merchants' Line, operated by W. R. Grace & Company, plies between New York and ports of Ecuador, Peru and Chile, with a sailing each way about every two weeks.

The U. S. and Pacific Line operating between New York and Valparaiso, calling at Cristobal, Balboa, Callao, Mollendo, Arica, Iquique, Antofagasta and Coquimbo and making the trip from New York to Valparaiso in 19 days.

The United Steel Products Company operates the New York and South America Line between New York and the west coast, as far south as Valparaiso, with a sailing each way about every third week.

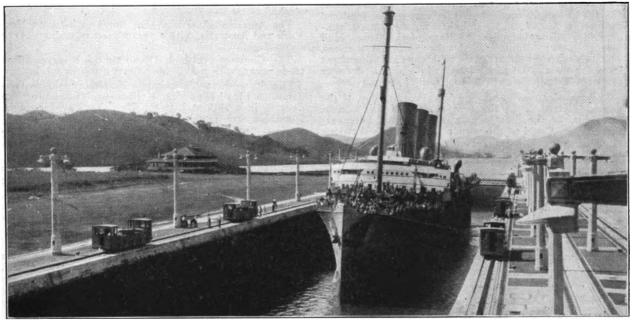
The West Coast Line (Wessels, Duval & Company) plies between New York and Chile and Peru, with a vessel going each way about every third week.

The three lines named in this section carry cargo

only.

From Europe to the Pacific Coast of South America: The East Asiatic Company has a line from Copenhagen, by way of Gothenburg and Christiania, to Valparaiso, and intermediate ports, operating on a fortnightly schedule. Passengers are carried.

The Johnson Line plies between Swedish and other Scandinavian ports and the west coast, as far as Valparaiso, with a sailing each way about every sixty days. Passengers are carried.



The 590-feet C. P. R. Liner Empress of Asia in Miraflores Lecks, Panama Canal. The Empress of Asia Paid \$9,332 in Canal Tolis, and Passed from the Atlantic to the Pacific in Nine and a Half Hours



Pler and Building at Balbea Showing Largest Floating Crane Ever Built
Copyrighted by Underwood & Underwood

The Booth Line has a number of vessels in service between Great Britain and the west coast of South America; sailings have not been regular, and the ships are regular Brazil traders, tramping during the war on account of interrupted trade in their usual area. They are cargo ships,

The vessels of the Nautilus Steam Shipping Company (the old Gulf Line) sailing from Great Britain to the west coast of South America via the Straits of Magellan, and returning up the coast, make the home voyage through the Canal. The service has cargo steamers, monthly.

The Royal Dutch West India Mail Steamship Company has approximately a monthly service from Rotterdam to the west coast of South America and return. The ships handle cargo only.

The Pacific Steam Navigation Company has a vessel frequently direct from Great Britain to Peru and Chile; but the principal service of this company is rendered through its lines from Cristobal to the west coast, connecting at Cristobal with the lines of the Royal Mail Steam Packet Company and other Atlantic carriers. The same arrangement governs homeward shipments from the west coast, the vessels which go all the way to Great Britain being a minor part of the service.

The transfer service at the Atlantic terminus of the Canal, referred to in the first section of this article, cares for the the greater part of European shipments through the Canal to the west coast of South America.

From Europe to the west coast of North America: The East Asiatic Company has a service between Scandinavian ports and San Francisco, operating a vessel each way about every fourth week. The ships carry passengers.

The Johnson Line has a service over this route, primarily between Sweden and San Francisco, with a vessel each way every sixty days, with passengers.

The Harrison-Direct Line has a service between Great Britain and the west coast as far as Puget Sound, with a vessel each way approximately every sixth week. These are cargo ships.

The Maple Leaf Line plies from New York to Vancouver, to return to Europe by way of California ports and Santa Rosalia. Ships of this line are scheduled to sail every five weeks. They do not carry passengers.

From the Atlantic coast of the United States to Japan, Siberia, China, and the Philippine Islands: The movements of vessels over this trade route have not been regular, as most of the ships load and clear as cargo offers and do not attempt a fixed schedule. The tendency to this practice is fostered by the length of the voyage and a general uncertainty as to the return voyage, with what cargo and by what route.

The principal lines operating in this service are the American and Oriental Line, the Barber Line, Shewan Tomes and Company and Alfred Holt and Company, sending out a vessel among them, about once every ten days from New York; the American & Manchurian Line (Ellerman & Bucknall), about once in three weeks; the Nippon Yusen Kabushiki Kaisha, approximately semimonthly in each direction; and ships operated by Norton, Lilly & Company sail at irregular intervals, approximately once a month,

The Luckenbach Line is operating in this area, sending a ship out from New York about once in three weeks.

It may be noted here that the East Asiatic Company sends an occasional vessel to the Far East direct through the Canal; and at irregular times the vessels of the company return from the Far East to Denmark through the Panama Canal.

The Atlantic Gulf Far-East Line has sent a ship through the Canal, outward bound from the United States to Japan, and will continue the service according to the availability of tonnage.

The Prince Line uses the Canal for its service between the Far East and Boston and New York. Some of the ships have sailed to or from Vladivostok, others from Japan, others from Australia. The sailings are irregular, and passengers are not carried.

From the Atlantic coast of the United States to Australia and New Zealand: The United States & Australia Line operates between New York and the ports of New Zealand and Australia, with a vessel out about every month.

The Ellerman Lines have a service from New York to Australia and New Zealand, with irregular sailings.

The Luckenbach Line is operating a service to Australia and New Zealand, with irregular sailings.

The Federal Steam Navigation Company has established a line between New Zealand and New York, with a ship each way approximately every six weeks.

The American-Australia Line operates between New York and Australia, with a vessel each way about every sixty days.

The Commonwealth & Dominion Line serves these trade areas, with a ship about every fourth week.

The Stoomvarts Mattschappe Nederland, the Rotterdamsche Lloyd, and the Holland-American Line cooperate in a service between New York and Batavia, Soerabaia and Semarang.

From Europe to Australia and New Zealand: The New Zealand Shipping Company operates a line between New Zealand and Great Britain, with possible way calls at Norfolk and New York. Sailings each way are every 28 days for mail boats, with intermediate sailings of cargo ships.

The Federal Steam Navigation Company operates over the same route, with a ship each way about once a month.

The Shaw, Savill & Albion Company Limited of London has been sending some of its ships through the Canal on the homeward voyage from New Zealand. The service is irregular. The outward bound ships have been going around the Cape of Good Hope and none have been sent through the Canal to date. This is a cargo service.

The Swedish East Asiatic Company has an irregular service between Scandinavian ports and the Far East.



## Traffic Through the Canal

The Panama canal has made a wonderful showing during the war in view of the destruction of merchant tonnage incident to the war and the diversion of many vessels to transport uses. In the fiscal year of many vessels to transport uses. In the fiscal year 1915, 1,088 ships passed through the Panama ditch, of an aggregate net tonnage of 3,849,135. In 1916 the number of ships using the short cut between the world's two greatest oceans fell off to 787 and the tonnage decreased to 2,479,762. In 1917, however, there was a change in the figures. A total of 1,876 ships passed through the canal, their tonnage was 6,009,258, and their cargoes aggregated 7,229,255 tons. In 1917 the tolls amounted to \$5,631,781, a sum which slightly exceeded the cost of operation and maintenance. ceeded the cost of operation and maintenance.

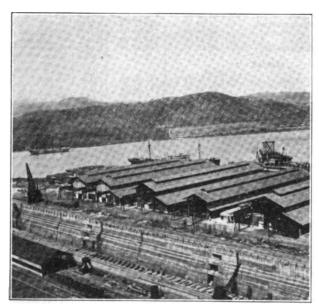
## Handling Cargo at the Canal

All handling of cargo on docks operated by the Panama Railroad, which controls all the docks at the canal terminals, will be done by the forces of the railroad. Vessels desiring to do their own stevedoring will not be permitted to do so. The canal authorities, however, are prepared to stevedore cargo for vessels coming to the canal ports at any time, day or night, Sundays or holidays, that this work may be desired.

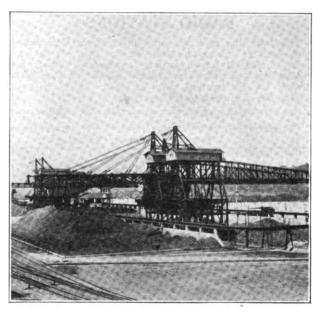
On general cargo landed on the docks at the entrances to the canal for local delivery at those docks, the canal charge under a new tariff placed in effect is 40 cents a ton. On explosives and some special cargoes the rate is higher. Merchants shipping to Panama and to nearby Central American ports will be interested in knowing that under the new schedule no storage will be charged on cargo for local delivery until after 72 hours from the time the steamship has completed the delivery of cargo. On cargo stored on the inclosed and fireproof docks of the canal, no charge will be made for the storage or transfer of cargo until after 35 days from the time same is ready for delivery. On cargo both routed and unrouted held for a longer period than 35 days, storage for the first 30 days will be charged at the rate of 3 cents per ton per day and thereafter at the rate of 5 cents per ton per day.

## Canal Tolls

A proclamation has been issued stating that tolls on traffic through the Panama Canal will be \$1.20 per net register ton.



Seene at Pacific Entrance-Copyrighted by Underwood & Underwood



Cealing Station at Balboa-Copyrighted by Underwood & Underwood

The assessment of \$1.20 per ton is not made on a basis of the shipping ton of 2,240 pounds, but on the basis of the vessel ton, the standard measurement of which is 100 cubic feet of space.

Merchant vessels (cargo, passengers) \$1.20 per net vessel ton—each 100 cubic feet of actual earning ca-

pacity.

Ships in ballast 40 per cent of the above.

Naval vessels other than transports, colliers, hospital

Army and Navy transports, colliers, hospital and supply ships 50c per displacement ton.

Army and Navy transports, colliers, hospital and supply ships \$1.20 per net ton (same rules are employed in measuring merchant vessels).

# Dockage and Wharfage

The charges for dockage of vessels and wharfage on cargoes at points on the Pacific Coast vary to such an extent that it is impracticable to set forth the rates of wharfage applicable on freight originating at or transshipped through Pacific Coast ports. As a general proposition wharfage charges on freight passing through ports under through bills of lading or under arrangements for through carriage, are included in the rates of transportation effective between point of shipment and the final destination; wharfage charges incidental to such transportation service being assumed by carriers. Commercial wharfage charges when same are applicable range from ten (10) cents to one dollar (\$1.00) per ton weight or measurement whichever basis produces the greater revenue.

At certain ports where the movement of vessels is wholly under the control or direction of state or federal authorities cargoes delivered to or discharged from such vessels is subject to the assessment of tolls or tonnage taxes such tolls or taxes being levied against the freight, and unless provisions to the contrary are included in the contract of transportation are collected

from shippers or consignees.

Shippers who contemplate handling goods over wharves at any of the Pacific Coast ports will be gladly furnished with full information and rates of available wharves in various ports if they make their wants known to the editor of Pacific Ports.

#### Square Measure

144 square inches...1 sq. ft. 9 square feet..1 square yard 301/4 square yards..... .....1 square rod 40 square rods.....1 rood 4 roods...... 1 acre 640 acres.....1 square mile



## **RADIO STATIONS**

The following is a list of United States Government radio stations. Excepting those marked thus (\*) they are open to general public service (commercial traffic) and communications with most of them can be relied on by all vessels for 100 nautical miles at least. All U. S. naval vessels are also open to this service:

Station	ation	Call	Wave Length	
Station	Latitude	Longitude	Signals	wave Length
U. S. NAVAL				
(Alaska)	. , .	. , .		
St. Paul, Pribilof Islands St. George, Pribilof	57 07 20 N	170 16 20 W		300; 600; 1,800
Islands Outch Harbor Kodiak Cordova	56 36 00 53 53 14 57 46 42 60 27 45 57 02 58	169 43 00 166 32 08 152 21 52 145 58 55	NPR NPS NPA NPP NPV	300; 600 300; 600; 1,800 300; 600; 1,800 300; 600; 1,800
Sitka Seward Juneau Ketchikan	57 02 58 60 10 00 58 19 00 55 30 00	145 58 55 135 20 55 149 20 00 134 28 00 131 25 00	N P V K D U K P B	300; 600; 1,800 300; 600; 1,800 600; 2,200 300; 600; 3,000 300; 600; 1,800 3,100
(United States)				
Puget Sound, Bre- merton, Wash Fatoosh Island,	47 33 47	122 38 19	1	600; 2,500
Wash North Head, Wash	48 23 31 46 17 56	124 44 03 124 04 30	NPD	300; 600; 1,000 300; 600; 1,000 1,800; 2,000 300; 600 300; 600; 1,000 1,800
Cape Blanco, Ore Eureka, Cal	42 50 22 40 41 37	124 33 30 124 16 20	N P F N P W	300; 600 300; 600; 1,000
Farallon Islands, Cal Point Arguello, Cal San Diego, Cal	37 41 58 34 34 39 32 42 26	123 00 04 120 38 40 117 14 49	N P I N P K N P L	300; 600 300; 600 300; 600; 1,000 1,800; 2,000
Seattle, Wash	47 36 18	122 20 20		
Astoria, Ore	46 16 29	124 03 11	KPC	1,600; 3,980 300; 600; 1,800 3,100; 3,800 300; 600
Marshfield, Ore Yerba Buena Island Mare Island, Cal	43 21 15	124 20 30	NPG	300; 600 600; 1,000; 2,500
Hillcrest (S.F.), Cal San Francisco Beach.			KPH KFS	300; 600 300; 600; 3,000
So. San Francisco			KSS	3,500 300; 600; 1,800 5,000; 8,000
Avalon, Cal East San Pedro, Cal. Inglewood, Cal			KPI KPG KFZ	10,000 300; 600 300; 500; 600 300; 600; 3,300 4,000
(Tutuila)	•			
Samoa			NPU	600; 650
(Canal Zone)				
Colon Balboa	9 22 08 8 56 34	79 54 07 79 33 21	N A X N P J	300; 600; 1,800 300; 600; 1,800
(Philippine Islands)				
Cavite Olongapo	14 28 55 14 49 02	120 55 00 E 120 16 59	N P O N P T	600 600
(Marianas)				
Guam	13 27 12	144 44 08	NPN	300; 600; 1,800

_	Loc	ation	Call	l
Station	Latitude	Longitude	Signals	Wave Lengths
(Hawaiian Islands)	. , .	. , ,	1	
*Pearl Harbor Heeia Point	21 18 23	157 51 56 W	N P M K H X	300; 600; 3,000; 8,000; 9,000;
Wahiawa			KHM KHN KHL	9,300; 10,660 300; 550; 750 300; 575; 600 300; 575; 600 300; 575; 600 300; 450; 600

90 55 60 14 9	162 163 132	23 00 22 57 23	18 22 06	w	***	v	F	300; 600; 2,000 300; 600; 1,200 300; 600
5 10 14 9	162 163 132	00 22 57	18 22 06	w	w	v	F	300; 600; 1,200
i2					Ŵ		Ī	300; 600 300; 600; 600
,     12								
	120	34	40	E	w	v	N	
0 5 0 0 0 0	121 118 124 125 125	00 42 04 36 02	20 40 10 20 19		ww	v v v	Ť O W	600 600; 1,200 600; 1,200 600; 1,200 600; 1,200 600; 1,200
İ								
ю	122	20	00	w	K	P	E	300; 575; 600
02 00 11 18 80 10 10 10 10 10 10	131 129 126 126 126 123 125	55 07 04 55 52 32 15	55 34 50 36 43 22 22 22	w	<b>&gt;</b>	AAAAAAA	HIGFCEBD	300; 600 300; 600 300; 600 300; 600 300; 600; 1,600 300; 600 300; 600 300; 600 300; 600
10 10 10	109	42	00		X X X	A A A	G F H	600 600; 900 600; 750; 900;
10 1					X	A A	E D	1,180 600; 900 600; 750; 900
	0500000 0 201800570 0 000 0	0 121 5 121 10 128 0 125 0 122 0 121 0 121 0 122 0 122 0 123 0 131 1 131 8 129 0 126 0 126 0 127 0 128 0 129 0 120 0 120 0 121	0 121 03 5 121 00 118 42 0 122 02 0 122 00 0 122 00 0 122 20 0 122 20 0 131 55 1 31 07 8 129 04 0 126 55 0 126 52 0 123 19 0 122 00 1 122 00 0 122 00 1 122 00 0 123 19	0 121 03 00 121 03 00 118 42 40 00 124 04 10 01 125 36 20 01 122 20 19 01 121 00 00 121 00 00 122 20 00 122 20 00 122 20 00 131 55 55 1 31 07 34 129 05 36 0 126 53 36 0 127 53 36 0 127 53 36 0 128 53 36 0 129 53 36 0 120 53 36 0 120 53 36 0 120 53 36 0 126	0 121 03 00 5 121 00 20 118 42 40 10 122 40 10 0 122 32 20 0 122 02 19 0 121 00 00 122 20 00 W 2 130 22 33 W 131 55 55 1 131 07 34 129 04 50 124 52 43 129 04 50 124 52 43 129 125 06 20 123 19 23 0 124 52 43 129 125 06 20 123 19 23	0 121 03 00 W 121 00 20 W 0 124 04 10 W 0 125 36 20 W 0 122 20 19 W 0 121 00 00 W  121 00 00 W  122 20 00 W  123 35 54 V 131 35 75 V 131 35 75 V 124 52 43 V 126 32 22 V 7 123 15 22 V 0 126 53 36 V 0 126 52 32 V 0 127 128 15 22 V 0 128 19 23 V	0 121 03 00 WV 121 00 20 WV 0 124 04 10 WV 0 125 36 20 WV 0 122 02 19 WV 0 125 36 20 WV 0 122 33 WV 121 00 00 WV  0 122 20 00 WK P  2 130 22 33 WV 131 55 55 VA 131 57 55 VA 131 57 55 VA 124 52 43 VA 126 52 36 VA 0 124 52 43 VA 7 123 15 22 VA 0 123 19 23 VA 0 123 19 23 VA 0 109 42 00 XA 0 110 58 00 XA	0 121 03 00 W V Y 121 00 20 W V X 118 42 40 W V Y 124 04 10 W V T 125 36 20 W V S 121 00 00 W K P E 131 55 54 V A H 131 55 75 V A H 131 55 75 V A H 129 04 50 V A G 126 55 36 V A C 126 55 36 V A C 126 55 36 V A G 126 55 36 V A G 126 55 36 V A G 126 52 22 V A B 125 06 20 V A D 123 19 23 V A K 125 06 20 V A D 126 52 06 2

Station	Location		Call	Wave Lengths
Station	Latitude	Longitude	Signals	wave Lengths
(Siberia) Anadir Petropavlovak Naiakhansk Oshotsk Nikolajefak	64 34 00 53 00 10 61 33 00 59 22 00 53 08 19	0 , , , 175 35 00 E 158 38 45 159 59 00 143 20 00 140 42 54	RPK RNN ROT	1; 180 300; 420; 600 300; 600 300; 420; 600 300; 420; 600 300; 600
(Japan)				
Otchishi	43 10 17 35 44 08 35 27 00 33 25 32 34 26 30 34 21 00 32 37 20 25 18 00	145 30 20 140 51 12 135 19 00 135 46 08 133 48 05 130 50 00 128 37 08 121 32 00	JCS JMZ JSM JSX JTS	300; 600 300; 600; 1,800 600; 900; 3,500 300; 600 300; 600; 1,800 300; 600; 1,800 300; 600
(China)				
Dairen (Dainy) Woosung	38 57 50 31 21 00	121 53 15 121 25 00		300; 600 600; 1,200; 1,600; 2,100
Shanghai	31 15 00 31 11 32 26 07 00	121 29 00 121 25 48 119 18 00	xow	600 600; 900; 1,800 600; 1,200; 1,600; 2,100
(Borneo)	23 10 00	113 20 00	XNP	600; 1,200; 1,600; 2,100
Sandakan	5 50 00	118 07 00	VQB	300; 600
Amboina	3 46 40	128 06 00	PKE	600; 1,600; 2,800

# **Immigration Laws**

Synopsis of Regulations Prepared for Handy Reference on the Part of Masters of Vessels

(By FRED H. LYSONS, Attorney, Seattle, Wash.)

Under the immigration laws of the United States, certain precautionary measures are important to be observed by the masters of vessels bringing passengers to American ports. First of all, care must be had in the manner of soliciting patronage. The usual and customary methods of advertising by letters, circulars, or otherwise, the sailing dates of vessels, terms of passage and facilities of transportation are permitted, but they cannot go to the extent of soliciting, inviting, or encouraging, directly or indirectly, the immigration of aliens into the United States.

Nor may all aliens who offer themselves as passengers be received without question, idiots, imbeciles, feeble-minded, epileptics, insane, or those who have had one or more attacks of insanity; persons of constitutional psychopathic inferiority; those afflicted with chronic alcoholism; paupers, professional beggars, vagrants; those afflicted with tuberculosis or with any loathsome or dangerous contagious disease; persons mentally or physically deficient, to the extent that it may affect their ability to earn a living; persons who have been convicted of or admit having committed a felony or crime involving moral turpitude; polygamists or those who practice polygamy or believe in it; anarchists or those who believe in or advocate by violence of the Government of the United States or of all forms of law, or the unlawful destruction of property, or advocate the assassination of public officials; or those affiliated with any organization advocating any such measures; prostitutes or those coming here for any immoral purpose; those who procure or attempt to procure or import persons for the purpose of prostitution or any other immoral purpose, or who are supported in whole or in part by the proceeds of prostitution.

Children under sixteen years of age not accompanied by or coming to one or both parents.

Contract laborers, except for skilled employment for which laborers cannot be found in this country; persons who come in consequence of advertisements in a foreign country for laborers; persons likely to become a public charge; those who have been deported under the immigration laws and who seek admission within one year after such deportation; persons whose passage is paid by any other person, association or foreign government.

All Chinese laborers; and unless otherwise provided by existing treaties persons who are natives of foreign islands south of the 20th parallel latitude north, west of the 160th meridian of longitude east, and north of the 10th parallel of latitude south; or who are natives of any country in the continent of Asia west of the 110th meridian and east of the 50th meridian and south of the 50th parallel of latitude north, except that portion situated between the 50th and 64th meridians of longitude and the 24th and 38th parallels of latitude north. Excepted from the excluding provisions of this paragraph are Government officers, ministers, missionaries, lawyers, physicians, chemists, civil engineers, teachers, students, authors, artists, merchants, and travelers for curiosity or pleasure and their legal wives and children under sixteen years of age who shall accompany them.

What is known as a literacy test is applied to immigrant applicants for admission, those being rejected who are unable to read in some language or dialect; but excepted from this literacy test are applicants 16 years of age or under, also aliens coming here to avoid

religious persecution in the country of their last permanent residence.

As to aliens who are accepted as passengers: Eight dollars must be added to the passage money of each, or otherwise collected from them as head tax, to be paid by the master, agent, owner, or consignee of the vessel to the collector of customs at the port of arrival and which, if not paid, constitutes a lien upon the vessel and a debt against the owner of the vessel in favor of the United States Government.

Immigrants 16 years or under are not subject to this head tax

Excepted also from the head tax requirements are aliens entering the United States from Canada, New Foundland, Cuba or Mexico, whose bona fide residence was in one of these countries for at least one year immediately preceding such entry; citizens of Canada, New Foundland, Cuba, or Mexico, who are returning from a visit to one of those countries, having theretofore acquired a legal domicile in the United States; admissible residents of any possession of the United States; aliens arriving in Guam, Porto Rico or Hawaii; aliens visiting the United States as tourists on business or pleasure; seamen landing in pursuit of their calling.

As to alien passengers of the excepted classes, however, the law seems to require a deposit of the head tax to the collector of customs, the same to be refunded when the classification of the aliens, as exempt, is established.

The master of the vessel shall deliver to the immigration officers at the port of arrival lists verified by himself, or the first or second officer, and the surgeon of the vessel, of the manifests made on embarkation, giving full personal description of each alien and all information required by such officer under the immigration laws. This verification shall be to the effect that they have found by examination and investigation that none of the said aliens are within any of the enumerated excluded classes. These aliens shall be listed in convenient groups, no list to contain more than thirty names and each alien shall be given a ticket numbered and arranged to facilitate convenient identification. Chinese aliens are required to be listed separately from others.

This information covers a vast amount of detail and it will be advisable for the master of the vessel to procure blanks, which are provided for that purpose by the United States Immigration Department.

Aliens brought to the United States in violaticn of law shall be returned to the country whence they came, the expenses thereof, including their maintenance while on land, to be borne by the vessel on which they came. For the purpose of facilitating such return and the deportation of aliens generally, masters of vessels carrying passengers are required to give to the immigration authorities at the port of departure, twenty-four hours' advance notice of their sailing.

Heavy penalties, varying from a fine to imprisonment and, in certain cases, denial of clearance papers to the vessel, are provided for violation of any of these requirements.

In addition to the general immigration laws many war time regulations are still in effect, and in any case of doubt the master of the vessel should consult the United States Consul at the port of embarkation of any immigrant.

# Commercial Dictionary

Source and use of the commodities that enter into the world's commerce, the only omissions being such commodities as coal, iron, furniture, leather, wheat, fruit, and a few score others which by their common nature are too well known to make necessary their inclusion in a reference list, but which, with those given, make a complete list of every commodity of commercial importance in the world.

#### Α

Abaca, a kind of banana indigenous to the Philippines, from which is produced manila hemp, also Indian muslins from the finer fibres.

Abietene, a volatile oil distilled from the resin or balsam of the gray pine (pinus sabiniana). It is almost pure normal neptane.

Acacias yield Gum Arabic, formerly brought only from Arabia and Egypt, but now imported also from West Africa.

Acajou, the cashew tree, or its fruit, a tropical anacardiaceous tree native to America but naturalized in all warm countries. From the kernel of the cashew nut a sweet oil of excellent quality is obtained. (2) The mahogany tree, or any one of several related trees, also their timber.

Acetal, a colorless fluid of agreeable odor, formed by slow oxidation as in brandy distillation; of great value in organic chemistry.

Acetylene is a gas formed by the direct union of carbon and hydrogen at a very high temperature. It is also prepared by the action of water upon calcium carbide. It burns with a very bright flame, and possesses a peculiar odor.

Acetic Acid is obtained from the liquid which passes over in distillation when wood is heated in closed iron cylinders.

Aconitin, a white, crystaline intensely poisonous alkaloid from the root and leaves of aconite (the herb wolfsbane or monkshood). It is very efficacious as a remedy for rheumatism and neuralgia.

Agar-agar, a non-nitrogenous substance of a gelatinous consistency derived from the Ceylon moss and related East Indian seaweeds. Some varieties are distinguished as Japanese agar. Used in the Orient for soups and jellies,

Agate, a precious stone composed of layers of quartz of different colors, is employed commercially as a burnisher.

Agave, a large plant of tropical America and the southwestern United States. The common fleshyleaved century plant, or American Aloe. The juice obtained from the leaves of some species utilized as soap; other varieties furnish valuable fibre. In Mexico the plants are called maguey, where pulque, an intoxicant, is made from the fermented juice of the plant.

Alabaster, a semi-transparent variety of gypsum of calcium sulphate, is used for statuettes. Spain and Italy yield the best qualities.

Alcohol or Spirit of Wine, is a liquid generated by the fermentation of fluids containing sugar and other saccharine substances. Pure, or Absolute Alcohol, Sp. Gr. 0.8 (about); boiling point 170 deg. F. is extensively used in medicine and the arts. Methylated Spirit, a mixture of nine parts of alcohol, with one part of pyroxylic, or wood-spirit, is largely used as a solvent of resinous substances. The Proof Spirit of the Excise contains 50-8 parts by weight of alcohol to 49-2 of water and possesses a Sp. Gr. of 0-92. Rectified Spirit contains 16 per cent of water, Sp. Gr. 0-84. Weaker spirits are termed "Under Proof" (U. P.) and stronger spirits "Over Proof" (O. P.)

Alfa or (Halfa), African name for Esparto Grass (q. v.).

Algaroba, the carob; also its edible beans or pods, called St. John's bread. Pods used in Mexico for fodder, also in tanning. From the bark of the (Algaroba glandulosa) of Arkansas a gum is obtained, which resembles gum arabic.

Alizarine, a dye-stuff, formerly prepared from madder, now artificially from anthracene, producing turkey

red, orange, violet, etc.

Alkali is a substance which combines with an acid to neutralize it and form a salt. The principal alkalies are potash, soda, lime, ammonia and lithia. They have an acrid taste (that of soap) and turn vegetable blues green.

Alkaloids are vegetable principles possessing alkaline properties to some degree inasmuch as they enter into chemical combination with acids. Many are valuable drugs and active poisons. Atropine is found in Deadly Nightshade; Brucine in the seeds of (Nux vomica); Cinchonine, in Cinchona bark; Cocaine in coca leaves; Conine in the seeds of the hemlock; Hyoscaymine, in henbane; Morphine, and Narcotine in opium; Nicotine, in tobacco; Piperine, in black pepper; Quinine in cinchona bark; and Strychnine, in the seeds of (Strychnos), (Nux vomica) and St. Ignatius' Bean.

Alkanet, an European plant from which is obtained a reddish brown dye, used for coloring oils, soaps, etc.,

and also for stains and varnishes.

Alloys are compounds formed by two or more metals. Gold and silver are too soft when used native for coinage, but the addition of 7½ per cent. of copper to silver gives an alloy sufficiently hard for the purpose. Copper is too soft to be turned in a lathe, but when alloyed with half its weight of zinc, it forms the harder substance known as Brass. Important alloys are:

Bell Metal, copper, 80 p. c.; tin, 20 p. c. Gun Metal, copper, 90 p. c.; tin, 10 p. c. Speculum Metal, copper, 67 p. c.; tin, 33 p. c. Type Metal, lead, 80 p. c.; antimony, 20 p. c. The alloys of other metals with mercury are termed

The alloys of other metals with mercury are termed Amalgams. Silver and gold are thus extracted from their ores; the minerals being crushed to powder and the precious minerals separated by amalgamation.

Aloe, a drug obtained from various species of (Aloe) Nat. Ord. (Liliaceoe), by drying the juice. Socotrine Aloes, so called from the island of Socotra, are the produce of (A. spicata), also found in East Africa and Bombay. Other varieties are brought from Barbados and Natal.

Aloe Wood, a West Indian shrub with hairy leaves and handsome scarlet flowers. Some species yield the drug aloes.

Alpaca, the Peruvian sheep akin to the Llama, an animal about the size of a deer, yields a very superior fleece, which is easily spun. The fabrics made from the wool are classified as alpaca-lustres, fancy-alpacas, and alpaca-mixtures.

Alpiste, the seed of the camary grass.

Alum, a mineral salt, the double sulphate of aluminum and potash, soda or ammonia is used as a mordant and for many other purposes in the arts. As it is only found to a limited extent in nature, a large quantity is manufactured by treating clay with sulphuric acid, or by decomposing alumshale.

Alumina occurs native in nature as Corundum, Emery, Ruby and Sapphire. Alumina prepared by adding ammonia to a solution of alum is largely used in calico-

printing and dyeing as a mordant.

Aluminum, a light white metal noted for its lightness

and resistance to oxidation.

Amadou, a spongy highly inflammable substance prepared in Germany from the fungus (Polyporus formentarius) and other species. Its common use is as tinder, after preparation by soaking in a strong solution of saltpeter.

Amber, a vellow fossil resin, used in the manufacture of ornaments, is chiefly found off the shores of Pomerania and Polish Prussia; off the east coast of Great Britain, and in gravel pits round London.

Ambergris, a solid inflammable fragrant substance. is found on the coast or floating on the sea near the shores of India, Africa and Brazil. It is believed to be a concretion formed in the stomach or intestines of the spermaceti whale.

Amberite, a kind of smokeless powder made in granu-

lated form; an explosive.

Amboyna Wood, the beautiful mottled and curled wood of Lingoum indicum), a fabacious tree of India and the Malay archipelago. It is a valuable wood. highly prized by cabinetmakers and used for inlaving

Amethyst, a purple variety of quartz; is the most

valuable of the siliceous gems.

Ammonia, formerly known as Spirit of Hartshorn, on account of its being prepared from burnt horns, hoofs, etc., is used in medicine and the arts.

Ammoniacum, concrete juice (gum resin) of a Persian plant, having a peculiar odor and used in medicine, having great stimulating properties; said to distill from a tree near the temple of Jupiter Ammon.

Amygdalin, a glucoside extracted from bitter almonds. Anchovy, a small fish of the herring family, is common in the Mediterranean and off the coast of Spain

and Portugal.

Angostura Bark, an aromatic bark used as a tonic, obtained from a South American rutaceous tree

(Cusparia angostura).

Aniline, a product of coal-tar, is extensively used in dyeing. The new aniline colors so widely used in calicoprinting, woolen and silk-dyeing have to a large extent displaced vegetable dyes.

Anime, a kind of resin obtained from various species of trees native to Africa; some species obtained from the West Indies are used for varnishing.

Aniseed Star, the fruit of the Star Anise; any magnoliaceous tree of the genus (illicium). which is star-shaped, is used in England as a spice.

Anise-Seed Oil, obtained by distillation from the fruit of (Pinpinella anisum), Nat. Ord. (Umbelliferoe), is used in confectionery and medicine. The plant, a native of Egypt, is grown in France, Germany, Italy, Spain, Malta and India.

Annatto, a red or yellowish-red dye prepared from the pulp surrounding the seeds of a tree (Bixa orellana) of tropical South America. It is used for coloring cheese, butter, etc., also used for dying cloth and for giving a bright color to varnishes.

Anthracene, a crystalline hydrocarbon accompanying naphthalene in final stages of distillation of coal-tar. Its chief use is in the production of alizarin, a valuable

dyestuff.

Anthracite, a hard, compact mineral coal, of high lustre, containing little bitumen and burning with a

nearly non-luminous flame.

Antifebrin, also called Acetanilid. A colorless white powder, often used as a substitute for quinine. It is prepared from Anilin.

Antimony, a bright white metal of moderate hardness, occurs native but seldom and in small quantities. The antimony of commerce is obtained from the sulphur ore—(stibnite)—and Japan furnishes the greatest supply. This metal is mainly useful in the arts owing to the alloys it forms with lead and tin, imparting to both greater hardness and durability. Type Metal is a mixture of lead, bismuth and antimony, while, Britannia Metal is a compound of tin and antimony principally with a small percentage of copper. Pewter consists of a small proportion of antimony with tin.

Antipyrin, a white crystalline powder; an artificial alkaloid. It is obtained from coal-tar, often used as a

substitute for quinine, and is soluble in water.

Apatite, native phosphate of lime, occurring usually in prisms, color often pale green, transparent or translucent. It is valuable as a fertilizer.

Aqua Fortis, Nitric acid. Applied especially to a weaker grade of the commercial acid.

Aqua Regia, a very corrosive fuming yellow liquid made by mixing nitric and hydrochloric acids, having power to dissolve gold.

Aquamarine, transparent pale green variety of beryl, closely allied to the Emerald, though commercially less valuable: stones obtained from Cevlon. Brazil and Siberia

Arabin, principal constituent of gum arabic.

Archill, sometimes called Orchell. A violet-red coloring matter derived from various species of lichen. Obtained from the Levant, the Canary Islands and Cape Verd Islands.

Areca, a genus of palm of tropical Asia and the Malay Archipelago, characterized by the thick rinded fruits. The (areca cathecu) yields the betel nut, used in the manufacture of tooth powder in Europe.

Argil, clay or potter's earth; sometimes pure clay, or alumina

Arnica, a plant, one species of which is used in medicine as a narcotic and stimulant; tincture of arnica is useful as a liniment in cases of sprains, bruises, etc.

Arrowroot is the starch extracted from the tuberous roots of (Maranta arundinacea), Nat. Ord. (Marantaceoe), a native of South America, introduced into the West Indies and Ceylon.

Arsenic, a chemical element, resembling a metal in physical properties, of steel gray color and brilliant lustre. Used for hardening other metals, also in Medicine. In certain forms it is deadly poisonous.

Arsenious Acid, an acid known only in the form of salts, the arsenites; a compound in which arsenic is

Useful in medicine and the arts. used.

Asafoetida, the gum resin of various Persian and East Indian apiaceous plants of the genus (Ferula). In medicine it is used as an antispasmodic. It possesses a strong odor and tastes of garlic.

Asbestos, a fibrous white or grey mineral, a silicate of magnesia and lime, is a variety of hornblende. It can be woven into "fire proof" cloth, or pulped into "inflammable" paper. It occurs in Georgia, Massachusetts, California and the Dominion of Canada.

Ash, Nat. Ord. (Oleaccoe) produces very tough and elastic timber much valued by wheelwrights. Manna, made from the sap of (F. ornus) and (F. rotundifolia) obtained by cutting the bark, is prepared in Sicily.

Asphaltum, or Bitumen, a substance produced by the gradual drying up of rock-oil (in situ) occurs in igneous rocks in Cuba; and in the rocks of Tertiary age in Pegu and Trinidad. It is employed for paving, and much of the commercial supply is imported from the great Pitch Lake in the Island of Trinidad.

Attar or Otto of Roses is obtained from several sweetscented species, especially the Damask Rose of the east. Being very costly the attar is generally adulterated with Indian Grass Oil. the east.

Ava, a plant indigenous to the South Sea Islands. highly intoxicating beverage is prepared from it by steeping in water. It is sometimes used as a local anaesthetic in place of cocaine.

Avocado Pear, the pulpy fruit of the tropical American lauraceous tree (Persea persea). It is similar in size and shape to a large pear, usually eaten as a salad. A black dye is obtained from the seeds and an illuminating oil from the pulp.

Azurite, blue basic carbonate of copper; occurring in beautiful monoclinic crystals, also massive and in earthy form. It is an ore of copper. It has also been used as a pigment, but is not very permanent.

Bael or Bhel Fruit, the fruit of the Aegle marmelos or Bengal quinces, a fruit closely allied to the orange. The rind of the unripe fruit is used medicinally.

Baize, a coarse wooled stuff, often with a long nap, usually dyed in plain colors. It is useful for draperies, table-covers, etc.

Balata, the gum of the bullet or bully-tree of South America, is used as a substitute for guttapercha in the insulation of telegraph wires.



Baleen, a horny substance, commonly called whalebone, growing in the mouths of certain kinds of whales (Balaenoidea). It grows in dependent plates, attached along the upper jaw, to collect and retain food.

Balsam or Gum Resins are partly soluble in water owing to the proportion of gum they contain and partially in alcohol, owing to their resinous nature; while gums are soluble in water but not in alcohol, and resins are soluble in alcohol but, not in water. The balm of Gilead, or balsam fir Nat. Ord. (Coniferoe) yields Canada Balsam. Other gum-resins are Asafoe-Frankincense (q. v.) much used in churches.

Bancoul Nuts, the name given to the seeds of the (Aleurites ambinux). The oil extracted from the seeds has properties like those of Castor Oil, slightly more fluid. It is used largely in the preparation of artists'

Bandana, a kind of printed handkerchief or printed color of red or blue. The pattern, usually of a circular, lozenge or other simple form, is made by discharging the color with bleaching liquor in a powerful press.

Baobab, a gigantic African tree, naturalized in India. The gourdlike fruit, known as monkeybread, contains a pleasantly acid pulp, which is eaten, and affords a beverage. The leaves and bark are used medicinally and the bark is also made into cloth and ropes by the natives

Barilla, the alkali produced by burning plants of various species of Salsola, and lixiviating the ashes. It is an impure carbonate of soda, used for making soap,

glass and for bleaching purposes.

Bark of several varieties rank as commercial com-modities. The most important bark used medicinally is that produced by various species of (Cinchona), a group of evergreen trees, Nat. Ord. (Rubiaceae), natives of the Andes of Peru and Bolivia, but now introduced into India, and Java, Japan and Mauritius at elevations of from 7,000 to 10,000 feet. The medical properties of the head are owing to the procinal properties of the bark are owing to the presence of three alkaloids—Quinine, quinindine and cinchonine—the most effectual remedies known against intermittent fevers. Cascarilla Bark imported from the Bahamas, product of (Croton eleuteria), Nat. Ord. (Euphorbiaceae), is occasionally used as a substitute for cinchona. Cerdon and Quassia are also used medi-cinally. In the bark of the Oak Nat. Ord. (Corylaceoe), a peculiar substance termed tannin, or tannic acid, occurs and this is employed in the preparation of leather.

Barytes, Sulphate of Baryta, or Heavy Spar is a beautiful crystalline mineral. It is employed as a sub-stitute for and to adulterate white lead.

Bass, the fibre of two South American palms, exported from Para and Bahia, is used in brush making; another kind is brought from West Africa. When first introduced it was generally known as vegetable whale-

Bast, the strong inner fibrous bark of various plants and trees, generally known as bast-fibre. It is used for making cordage, the well-known bast-mats, and for various other purposes.

Bayberry, the fruit of the Bay Tree; a myrtaceous tree of the West Indies (Pimenta acris) closely related to the allspice tree. It yields an essential oil known as oil of myrcia; also called wild clove, Jamaica Bayberry and wild cinnamon.

Bay Rum, a fragrant liquid distilled from the bay-berry (Myrcia acris) and used for cosmetic and medicinal purposes.

Bdellium, a substance mentioned in the Bible, variously taken to be a gum, a precious stone, or a kind of amber; a gum resin from India, Persia and Africa.

Beam Tree, a tree varying in height from twenty to forty feet found in Europe. The wood of the Beam Tree is very hard and is used for making handles of knives and forks, certain parts of musical instruments, cogs of wheels in machinery, etc.

Bebeerine, an uncrystallized alkoloid, obtained from the bark of the bebeeru, a tropical South American lauraceous tree, and other plants. It is a tonic and is sometimes used as a substitute for quinine.

Beche-de-mer, or trepang, a huge sea-slug, is caught off the coasts of Queensland and New Guinea, exported to China for making soup.

Bedda Nuts, a species of myrobalan, the fruit of a palm tree from which a balsam was made. Myrobalan are produced by various East Indian species of Terminalia. A permanent black dve is obtained from their nuts

Beige, having the natural color. Said of fabrics made

of undyed or unbleached wool.

Belladonna, Deadly nightshade, an European plant with bell shaped flowers and black berries. The whole plant is very poisonous. Its root and leaves are used medicinally, as a mild narcotic and anodyne, and a powerful mydriatic. ·

Benzene or Benzol was discovered by Faraday in 1825, in a tarry liquid resulting from the destructive

distillation of coal-tar.

Benzine is the name given to a distillate of petroleum used as a substitute for turpentine, as a solvent for oils and fats. Benzoline is the name applied to benzine and impure benzene.

Benzoic Acid, an acid crystallizing in the form of light, white, satiny flakes. It occurs in benzoin and other resins, and in cranberries. It finds considerable use in medicine and color manufacture; called also flow-

ers of benzoin.

Benzoin, or Gum Benjamin is the aromatic and resinous juice of (Styrax benzoin) of Sumatra and Java, used in perfumery and for incense. Its tincture yields Friar's Balsam or Jesuit's Drops, and is used in the manufacture of Court Plaster.

Benzole, a mixture of hydrocarbons of the benzene series, obtained in the refinement of coal-tar. It is used as a solvent and cleaning agent, also in color

manufacture, etc.

Bergamot, a tree of the orange kind (Citras aurantium); also its fruit, whose rind yields a fragrant essential oil; snuff perfumed with Bergamot; the essence or perfume made from Bergamot fruit.

Beryl is an accessory component of granitic rocks. The clear, transparent varieties are highly prized as gems, as (aquamarine) and (emerald), both green, the latter the darker. The element beryllium with alumina forms (Chrysoberyl) or "cat's-eye" and (Alexandrite).

Betel-Nut, the fruit of (Areca catechu), Nat. Ord. (Palme), is chewed in Central and tropical Asia as part of the compound called betel, which reddens the saliva, brightens the hue of the lips and blackens the teeth. Betel-Leaf is the produce of (Piper betle), a twining plant, also used in the preparation of betel.

Bhang, the Hemp plant; a narcotic and intoxicant made in India of its dried leaves and seed capsules.

Birds' Nests, edible, are made by a species of swallow, from a secretion resembling isinglass. They are to China, where they constitute an esteemed article of food.

Bismuth, a reddish white metal softer than copper. Sp. Gr. nearly 10, neither malleable nor ductile, is used in the preparation of pewter, and typemetal. It forms a brilliant white alloy with an equal quantity of lead. Solder is composed of bismuth 1-9, lead 5-9, and tin 1-3. Bismuth occurs in nature chiefly as a Sulphide.

Bitumen, a general term including a number of inflammable substances, as asphaltum, naphtha and petroleum (q. v.).

Blacklead, see Graphite.

Blende, see Zinc.

Blind Coal, a popular name for anthracite.

Blubber, fat of whales and other large marine mammals, from which oil is obtained.

Blue Gum is the Australian colonial name of the (Eucalyptus) tree, Nat. Ord. (Myrtiaceoe) of that con-



tinent. The blue gum yields eucalyptus oil, which is distilled from the leaves. It has been introduced into the Channel Islands and Cyprus where it succeeds well.

Blue Stone, Blue vitriol; sulphate of copper.

Bole, a friable earthy clay, usually colored red by oxide of iron and used to color various substances. It is used to color and adulterate various substances, formerly used in medicine. It consists essentially of hydrous silicates of aluminum, or less often of mag-

Bombazine, a twilled dress fabric having a silk warp

and worsted weft. Manufactured in Norwich.

Bone Black, the black carbonaceous substance into which bones are converted by calcination in close ves-sels—called also animal black, or charcoal. It is used as a discoloring material in filtering syrups, extracts, etc. and as a pigment called "Ivory Black."

Bone Earth, mineral matter remaining after the combustion of bones, an element in various manures. It contains from 70 to 80 per cent. of calcium phosphate.

Boracic Acid, a saline product obtained by various processes from certain lagoons in Tuscany. Used in the preparation of certain kinds of glass, and also as an antiseptic dressing for wounds; it is chiefly used in making of borax

Borax, a chemical compound of boracic acid and soda, much used as a flux for metals, is found native abundantly in California, also in Tibet, where it is known as Tincal; in Persia, China and South America. It occurs also in Tuscany. The element Boron is a grey powder, which burns in oxygen or chlorine.

Bort, a defective diamond. Material consisting of imperfectly crystallized or coarse diamonds, or frag-ments made in cutting good diamonds. Bort is used as

an abrasive. Boxwood, the timber of the box-tree, Nat. Ord. (Euphorbiaceoe), furnishes the blocks used by woodengravers, owing to its close texture and hardness. It is a native of South and Southeastern Europe and grows wild in some situations of England.

Brattice Cloth, heavy cloth of canvas, often with

water-proofing covering.

Brazil-Wood, the timber of (Caesalpinia crista), Nat. Ord. (Legguminose) is used as a red dye. It is exported from Pernambuco, and violin-bows are made of it.

Brie, a kind of cheese with a rough exterior, resembling a pancake. It is manufactured in large quantities in France.

Brill, an European flatfish (Bothus rhombus) allied

to the turbot, esteemed as a food.

Brimstone, Commercial name of sulphur, when made into sticks or rolls.

Britannia Metal, see Antimony.
Brocade, ornamented silk stuff; silk stuff woven with gold and silver threads, or ornamented with raised flowers, foliage, etc. Also applied to other stuffs thus wrought and enriched. (2) A kind of powder used for bronzing.

Bromine is a by-product of the manufacture of salt used as a bleacher and disinfectant. It also occurs in the potash deposits of Strassfurt.

Bronze, a red alloy of copper and tin, with sometimes small proportions of other elements, as zinc and phosphorous: used for ornaments, coins, statues, bells, etc. It is extensively used in the arts and is particularly valuable for castings.

.Broom Corn, a variety of sorghum having a jointed stem, like maize, used for making brooms.

Buckskin, skin of buck, yellowish or grayish when dressed. Breeches made of buckskin.

Buff Leather, a sort of superior leather prepared with a velvety or fuzzy finish from the skin of the buffalo, or of the ox, elk, etc., and dressed with oil, like chamois, formerly much used for military coats; the color is obtained by dipping hides in an infusion of oak bark.

Butter-Tree, a genus of plants found in India and Africa, yielding a sweet buttery substance from their seeds when boiled.

Butyric Ether, any ester of butyric acid (normal butyric acid is found as an ester in butter and various oils, etc.) especially ethyl butyrate, a colorless liquid found in various fruits and also prepared artificially. Butyric Ether has an odor like that of the pineapple and is the principal flavoring matter of rum. It is used under the name of rum essence or rum ether to make a factitious rum.

Cacao is prepared from the seeds of (Theobroma cacao), a tree of the Nat. Ord. (Byttneriacae), grown in Trinidad, in the northern republics of South America and in Brazil. The seeds are dried, roasted and powdered to form Cocoa, and are made up into a paste and flavored in the manufacture of Chocolate.

Cadmium, a metal related to zinc. It is used in making fusible alloys and an amalgam for filling teeth. and in electroplating. All its soluble compounds are poisonous. Iodine and bromide of cadmium are used in photography and sulphide of cadmium (cadmium yellow) valuable to artists.

Caffeine, Alkaloid of coffee. It is used in medicine

as a cerebral and cardiac stimulant.

Calambac, a Mexican tree, the fragrant wood of which is used extensively in perfumery manufacture.

Calcium, a silver-white rather soft metal of the alkaline earth group. It never occurs native but in combination is very common. It is present in chalk, stucco and many compounds of lime. The compounds of calcium are very valuable commercially.

Calomel is the name applied to a compound of mer-

cury and chlorine, much used in medicine.

Cambric, a fine white linen, originally manufactured at Cambrai, in northeastern France. The cambric of modern commerce is to a great extent a cotton fabric, although linen cambric is used for handkerchiefs.

Camomile, the dried inflorescence heads of (Anthemis nobilis), Nat. Ord. (Compositae), are used medicinally

in infusion as Camomile-tea,

Camphor is the solid volatile oil produced by the camphor laurel, a native of China, Japan and Borneo. It is used in medicine, varnishes, and fireworks, and as a deterrent against the depredations of mites.

Canada Balsam, the turpentine yielded by the balsam fir and obtained by breaking the vesicles upon the trunk and branches. It is a yellowish glutinous liquid, solidifying in time to a transparent mass, and is much used as a transparent cement, especially in microscopy

Candleberry, the wax myrtle or its berry. The wax obtained from the ripe berries is sometimes used in the manufacture of candles. The candleberry is native to the United States, but naturalized in South Africa. Cantharides, or Blister Flies, are small beetles which

secrete a principle that blisters the human skin. an article of commerce they are found in France, Italy and Spain.

Caoutchouc, see Rubber.
Capsicums or Chillies, the product of the red pods of (Capsicum annum), Nat. Ord. (Solanaceae), a native of the West and East Indies.

Caramel, Burnt sugar; a brown or black porous substance, obtained by heating sugar, and used for coloring spirits, gravies, etc.

Caraway, a biennial apiaceous plant, Carum carui, whose seeds, known popularly as caraway seeds, have an aromatic smell, and a warm, pungent taste. are used in cookery and confectionery.

Carbolic Acid or Phenol is produced from coal-tar as disinfectant both alone and combined with lime. Benzene is formed when phenol vapor is passed over zinc dust.

Carbonic Acid or Carbon Dioxide, a gas at all ordinary temperatures, occurs very abundantly in nature combined with lime, from which it may be separated by the addition of another acid.

Carmine, a product of the cochineal insect (q. v.), used in dyeing woolen goods scarlet.

Carob, an evergreen leguminous tree of Mediterranean countries. One of the edible succulent pods of the carob tree, which are used quite extensively for fodder. In some localities liquor is made from the pulp.

Carrageen, a purplish cartilaginous seaweed. When dried and bleached it forms the Irish moss of commerce. It is found on the coasts of Northern Europe and North America.

Carrara Marble, a white statuary marble obtained

from the mountains near Carrara, Italy.

Cascarilla, a euphorbiaceous West Indian shrub (Croton eluteria); also its aromatic bark. It is used as a tonic and sometimes mixed with smoking tobacco. It is called also eleuthera bark and sweetwood bark.

Cashew nut, the fruit of a tropical American tree akin to the sumac. The fruit is edible after the caustic oil called cardol has been expelled from the shell by roasting. Resides furnishing food, the pressed kernels yield

a sweet oil of excellent quality.

Cashmere, a rich stuff for shawls, scarfs, etc., made from the soft wool found beneath the hair of the goats of Cashmere, Tibet and the Himalayas. Some Cashmere, of fine quality, is richly embroidered.

Cassareep, a preparation made in the West Indies by boiling the sap of the bitter cassava (Manihot utilissima). It is the basis of the dish called pepper pot.

Cassava is the West Indian name of the manioc, and tle starch produced from it is called Brazilian arrow-

root, or Tapioca (q. v.).

Cassia is the dried bark of (Cassia lignea), the false cinnamon of commerce, a laurel cultivated in China and exported from Canton through Singapore.

Castoreum, a peculiar bitter orange-brown substance obtained from the genitals of the beaver of Canada and Siberia. It is used in medicine as a stimulant and

communis), or (Palma Christi) Nat. Ord. (Euphorbiaceae), an annual in southern Spain, Greece, but in most tropical countries a tree. The best oil, extracted from the seeds without the application of heat and hence termed "cold drawn castor oil," is imported from India.

Catechu or Cutch, the resin obtained from the wood

of (Acacia catechu), a thorny tree of the Nat. Ord. (Leguminosae), is imported from India for use in tanning and dyeing.

Catgut tough cord made from intenstines, chemically treated, of animals, especially of sheep-not of the cat-used for strings of musical instruments, driving lathes, etc. The best catgut strings are made in Naples.

Caviare consists of the preserved roe of sturgeon and

other fish, pressed into cakes or packed in kegs. That imported from Russia is considered the best.

Cayenne, a species of Capsicum with small and intensely pungent fruit; a spice made from the seeds; red pepper. It is used chiefly as a condiment.

Celestine, native strontium sulphate, commonly white, occasionally of a delicate blue color. Celestine is the source of nitrate of strontia, much used in the manufacture of fireworks.

Celluloid, a substance composed essentially of soluble gun cotton and camphor, resembling ivory in texture and used in the manufacture of jewelry, combs, brushes, photographic films, etc.

Cellulose, a carbohydrate of the same percentage composition as starch, convertible into starches and sugar by the action of heat and acids. When pure it is a white amorphous mass. Unsized, well-bleached linen paper is nearly pure cellulose.

Chalcedony, a cryptocrystalline, translucent variety of quartz, commonly of a pale blue or gray color, uniform tint, and luster nearly like wax. Chalcedony of special or variegated color is known as carnelian, chrysoprase, heliotrope, agate, onyx, etc. Found near Chalcedon, a town in Asia Minor, opposite to Bysantium, from which it derives its name; many specimens are found in England and Scotland.

Chemicals include alkalies, acids, salts and painters'

colors Chillies, the pods of (Capsicum annum), Nat. Ord. (Solanaceae), are imported from the East and West Indies for use in pickles, curries and sauces.

China Grass, the commercial name for the fibre of an Indian nettle, supplies Rhea Fibre from which the Chinese weave a light cloth as fine as French cambric.

Chinchilla, a rodent of Peru and Chili, of the size of a large squirrel, having very soft fur of a pearly gray color; fur of the chinchilla; heavy, long-napped cloth.

Chinese White, Zinc white; white pigment used in the arts.

Chintz, a printed cotton cloth, often glazed.

Chiretta, a gentianaceous plant (Ophelia chirata) of northern India, possessing bitter properties rendering

it useful as a tonic and cholagogue.

Chittagong Wood (from Chittagong, a district in Bengal, India), the close-grained and handsomely veined wood of either of two meliaceous trees of India (Chukrasia tabularis and Toona ciliata) used extensively for cabinetwork. From its resemblance to mahogany, it is often called Indian or East Indian mahogany.

Chloral, a colorless oily liquid, of a pungent odor and harsh taste, obtained by the action of chlorine upon ordinary or ethyl alcohol, and forming with water

chloral hydrate.

Chlorate of Potash, a substance obtained by the action of chlorine gas on a warm solution of chloride of potassium. It is largely used in the manufacture of fireworks. It is also used medicinally.

Chlorine, a yellowish gas, with a very strong scent, and poisonous, is obtained from common salt or sodium chloride and largely used for whitening cotton and linen fabrics.

Chloroform, a colorless volatile liquid having an ethereal odor and a sweetish taste, formed by treating alcohol or acetone with bleaching powder and slaked lime. It is a solvent of wax, resin, etc., and is extensively used to produce anaesthesia in surgical operations; also externally to alleviate pain.

Chocolate, a paste composed of roasted seeds of cacao and other ingredients, usually sugar, and cinnamon or vanilla.

Chromium, a brittle, almost infusible metal resembling iron in appearance, is important in the arts owing to the beautiful colors produced by its combina-tions with other elements, as the sesquioxide of chromium, a fine green; potassium bichromate, yellow; and bichromate of lead, orange. The chief ores of chromium are Chromic Iron, occurring in the serpentine rocks of the Shetland Islands, France, Norway and the United States; and lead chromate found in Siberia, the Ural Mountains and Brazil. Chrome Steel is used in the manufacture of edge-tools and burglarproof safes.

Cider, a kind of strong drink of Oriental origin. expressed juice of apples (formerly of some other fruits), used for drinking, for making vinegar, and for other purposes. Hard or fermented cider contains from two to seven or eight per cent of alcohol. It is produced extensively in Worcester, Gloucester and several other English countries; also the United States and France.

Cinchona, so named by the wife of Count Chinchon, viceroy of Peru, in the 17th century, who by its use was freed from an intermittent fever, and after her return to Spain contributed to the general propagation of this remedy. A tree native to the Andean region from Colombia to Peru, from which is obtained the drugs quinine and cinchona bark or calisaya bark, of which there are many varieties. The trees are extensively cultivated in Jamaica and the East Indies.

Cinnabar, the ore from which quicksilver or mercury v.) is obtained is the basis of the pigment vermilion. The countries producing cinnabar in order of their importance are Spain (Almaden), California (New Almaden), Austria (Idria), Peru, Tuscany and Germany.

Cinnamon is the inner bark of an evergreen tree (Cinnamomimum zeylanicum) Nat. Ord. (Lauraceae), a native of Ceylon, the largest gardens being near Colombo. It also grows in Java, Sumatra, Malabar and Cochin China, and has recently been introduced into Mauritius, Brazil, Guiana, Tobago, Guadeloupe, Martinique and Jamaica.

Citric Acid occurs in the juice of lemon from which it is prepared by saturation with chalk, the acid being then liberated from the insoluble citrate by the addition of sulphuric acid. Citric acid is sold crystallised.

Citron, a fruit resembling a lemon, but larger and

pleasantly aromatic. The fruit of any variety of Citrus medica, including the lime and the lemon. The fruit called Citron resembles the lemon in appearance and structure but is larger. The thick rind is used extensively in preserves and confections.

Civet, a substance taken from the glands of the civet, of a musky odor, offensive when undiluted, but agreeable when a small portion is mixed with another sub-

stance. It is used as a perfume.

Coal Tar, tar obtained by the distillation of bituminous coal, as in the manufacture of coal gas. Among its important ingredients are benzene, aniline, phenol, naphthalene, etc., which are respectively typical of many dyestuffs, flavoring extracts, drugs, etc.

Cobalt, a tough, lustrous, reddish white metal related

to and occurring with iron and nickel.

Coca, a south American shrub (Erythrozylum coca) also its dried leaves, which are used as a powerful nerve stimulant and yield cocaine. They resemble tea leaves in size shape and odor and are chewed (with an alkali) by natives of Peru and Bolivia to impart endurance in exertion or abstinence from food.

Cocaine, a local anaesthetic made from Coca-leaves, is much used in dentistry and surgical operations, espe-

cially those of the eye.

Cochineal, the produce of a plant-bug (Coccus cacti), Order Hemiptera, introduced into Europe from Mexico,

produces a brilliant scarlet in woolen fabrics.

Cocoa, the name given to the powdered cacao-bean, is produced in Nicaragua, Guatemala, Caracas (Venezuela), Quayaquil (Ecuador), Guiana, Brazil, Mexico, and Trinidad. See Cacao.

Cocoanuts are the fruits of (Cocos nucifera), Nat. Ord. (Palmaceae). The large seed is enclosed within a thick pericarp, the outer layers of which are fibrous, affording "Coir" used for mats, brushes, ropes. The inner layer of the pericarp, hard and bony, the natives of tropical shores convert into various utensils and ornaments. An oil used in the manufacture of candles and soap is obtained from the dried kernel (Copra) by pressure. The cocoanut palm flourishes on the seashore of most tropical countries. It is abundant throughout the "South Sea" Islands.

Coerulein, a dye of recent manufacture, used for dyeing and calico printing. By various chemical treat-ments colors of different hues are obtained, some of

which are very valuable in dyeing wools.

Coir, the prepared fibre from the outer husk of the cocoanut, used for making cordage, matting, etc. A very extensive trade in this article is carried on by Ceylon.

Cola, a tree of tropical Africa, the capsular fruit of which contains large seeds; those of (Cola acuminate)

being the Kola nuts of commerce.

Colchicum, a genus of bulbous-rooted European plants; saffron. A drug obtained from the dried corn or the seeds of Colchicum Autumnale, is used in gout and rheumatic affections.

Collodion, a glue solution of gun cotton in alcohol and ether, used in photography.

Colophony, Rosin; solid substance obtained by distilling turpentine. Used for rubbing the strings of musical instruments, etc.

Colza, a cabbage whose seeds yield an illuminating and lubricating oil.

Conchs, any of various marine shells, originally of various bivalve shells, now of various large spiral univalve shells, as those of the genera (Strombus Cassis), and their allies.

Condurango Bark, the bark of a South American climbing shrub. It contains a drug which is said to be efficacious in cases of venomous bites and which affords great relief to patients suffering from cancer.

Conifers, many of them valuable timber-trees, are of gigantic size, rapid growth, and occupy forests in Nor-

way, Sweden, Russia, Siberia, and Canada. Their timber is known in commerce under the name of deal, fir, pine and cedar; and is principally the wood of the spruce, larch and Scotch fir. Those products some-times termed Naval Stores, such as tar, turpentine, pitch, with numerous resins and balsams are obtained from coniferous trees. The preparation of woodpulp from the spruce timber is now a well established in-dustry in Canada, Newfoundland and Norway.

Contraverva, a tropical American moraceous plant (Dorstenia contrayerva), the aromatic root of which is stimulant, tonic, and diaphoretic.

Copaiba, an oleoresin obtained from several species of Copaiba, as a viscid, transparent, pale yellow or brown liquid of aromatic odor. It is a stimulant and is much used in affections of the mucous membranes. Called also copaiba balsam.

Copal is a semi-fossilised resin found in the sandy

soils of Angola, Sierra Leone and Zanzibar.

Copalchi Bark, either of two South America trees, Strychnos pseudo quina and Crotonniveus, having bitter medicinal bark used as a febrifuge.

Copperas, a sulphate of iron used in black dyes in

the manufacture of ink.

Copra, dried cocoanut meat, from which cocoanut oil is expressed. It is an important export from many tropical countries, very extensively from Ceylon.

Coprolites, phosphates of lime, are obtained from small hard nodules composed of ancient organic remains found in the crag of Suffolk, the Greensand of Farnham, Cambridge, Hitchin, the Isle of Wight, Havre and other localities in France. Phosphatic nodules are also abundant in the Lias.

Coquilla Nuts, the fruit of a Brazilian palm, yield a brown mottled substance used for making buttons.

Coral, used in the manufacture of ornamental articles, is the product of the Red Coral which occurs in the Mediterranean and Red Seas and in the Persian Gulf. The coasts of Spain, France, Corsica, Sardinia, Sicily, Tunis, Algeria, and Morocco are noted for this article, which is made up into ornaments at Marseilles, Genoa, Leghorn and Naples.

Corallin, a poisonous yellow dyestuff prepared by heating phenol with sulphuric and oxalic acids. It is a

derivative of rosolic acid.

Cordite, a smokeless explosive, a mixture of nitroglycerine and gun-cotton, so-called from its cord-like appearance.

Coriander, the apiaceous herb (Coriandrum sativum). Its aromatic seeds are used in medicine as a stomachic and carminative; also for flavoring curries and spirits. It is a native of S. E. Europe and the Levant, but now grown in many other localities.

Cornel, any plant of the genus Cornus, especially the cornelian cherry, which is of the size of a plum and of red color. The fruit in its preserved state is used in the manufacture of various kinds of confectionery. The wood of the Cornel tree is hard and tough and on account of these qualities is in great demand in the manufacture of instru-

ments, turned goods, etc.

Coromandel Wood, the wood of the (Diospyrus hirsuta) imported from India. It is used in cabinet making.

Corozo, any of several tropical American palms; the Ivory palm, its seeds being known as Corozo nuts. These nuts, which are sometimes called vegetable ivory nuts, contain a milky liquid which, when condensed, acquires a hardness almost equal to that of ivory. They are used in the manufacture of buttons, collar studs, etc. Ecuador and Costa Rica supply great quantities of the nuts.

Corrosive Sublimate, Mercuric chloride, transparent crystalline substance, easily soluble and of an acrid, burning taste. It is obtained by subliming a mixture of mercuric sulphate and common salt, and by other methods: called also bichloride of mercury.

Corundum, an oxide of aluminum, the commoner forms of which are powdered to make emery, is next to the diamond the hardest of minerals. The rarer varieties of this substance, known as Sapphire, Ruby, Oriental Ame-thyst, and Oriental Topaz, are gems of high value and great beauty.

Coto Bark, an aromatic and astringent medicinal bark obtained from an unidentified Bolivian lauraceous tree.

Cowries, the small white glossy shells of (Cypraea moneta), abundant on Asiatic and African shores, are used as money for the payment of small sums in India and some parts of Africa, one hundred being equivalent to a penny.

Crape, a thin crimped stuff, made of raw silk gummed and twisted on the mill; also a cotton or woolen fabric of like texture. Black crepe is used much for mourning garments, etc.

Cream of Tartar, a white crystalline compound, is made of purifying argol, or bitartarate of potassium.

Creosote, Wood-tar oil; an oily liquid obtained by distillation of wood-tar, or coal-tar, and used as an antiseptic and deodorizer in preserving wood, flesh, etc.

Cretonne, a strong white fabric with warp of hemp and weft of flax; now a strong unglazed cotton cloth, plain or printed on one or both sides, often used for covering furniture, for curtains, etc.

Croton Oil, a viscid, acrid, brownish yellow oil, a powerful purgative obtained from the seeds of Croton tiglium, a small East Indian tree. Croton is used externally as a liniment.

Cryolite, a mineral found on the coast of Greenland, consisting of the fluorides of aluminum and sodium is used for the preparation of fluorine.

Cubic Nitre, the name given to the deposits of sodium nitrate found encrusting the soil in the arid regions of Chile and Peru, also called Chile Saltpetre, forms a valuable fer-

Cudbear, a purple or violet dye, is prepared from several species of lichen of the genera (Lecanora) and (Roccella).

Culilaban Bark, the aromatic bark of (Cinnamomum culilaban) a lauraceous tree of the East Indies; called also

clove bark. It is sometimes used medicinally. Cummin, a dwarf umbelliferous plant, bearing aromatic seeds, cultivated in Southern Eupore, Northern Africa and India. The seeds are used in bread, cheese, etc., in certain localities in Europe; at one time used in medicine, but now employed only by veterinary surgeons. Morocco is the chief exporting country.

Cutch is a tanning principle allied to Catechu (q. v.) but extracted from a different plant.

Damar, or Dammar, is the resin exuding spontaneously from several species of pines growing in the East Indies.

Damask is a figured fabric, originally of silk, now of cotton, linen or wool, the pattern being woven, not printed.

Date Palm, a kind of palm grown extensively in Northern Africa, Western Asia and Southern Europe. In some localities the fruit of the date palm is the principal food of the inhabitants. The fibre of the date palm is used for making rope. The sap is used for making sugar, etc. When dried the dates are exported from Egypt, Turkey and Morocco.

Date Plum, a tropical tree of the ebony order, valuable on account of its timber and fruit. Beverages are made from its fruit and the bark is used medicinally.

Dextrine, a gummy amorphous substance used as a substitute for gum, sizing, etc., and obtained from starch by the action of heat, acids, or diastase.

Diaper is an unbleached linen cloth woven in dimly defined figures for towels, and table linen.

Digitalis, the leaves of the purple foxglove, a plant chiefly in Europe and Northern Asia. A valuable drug is obtained from the leaves, which is used as a remedy for cariac diseases, dropsy, etc.

Dill, an European apiaceous herb, bearing warming, pungent and aromatic seeds. The seeds, called dill, are used as a carminative and stimulant; also in cookery for flavoring pickles, etc.

Dimity, a firm, thin, corded fabric, white or colored, and often figured, used for dresses, etc.

Dividivi, the commercial name given to the curved pods of (Caesalpinia coriaria), a tree of the Nat. Ord.

(Leguminosae), native of the salt marshes of Curacao and Carthagena in South America, which are mixed with oakbark and valonia for tanning purposes.

Dogwood, a large shrub or small tree, whose wood is exceedingly hard and serviceable. An oil resembling olive oil is extracted from the tree. The bark is used medicinally. Charcoal for the manufacture of gunpowder

is obtained by burning dogwood.

Dragon's Blood is the name applied to the resinous exudation of several species of trees of the East and West Indies used for coloring. The eastern product is in the resin of (Calamus draco), a large species of ratan.

Dugong, an aquatic herbivarous mammal, allied in some respects to the whale. An oil used as a substitute for cod-liver oil is obtained from its fat.

Durra, Guinea Corn or Turkish Millet is a cereal for feeding poultry. As it is much used by the black populateeding pointry. As it is much used by the black population of the West Indies as food it has been termed Negro Corn. The poorer peasants of Italy employ it as a food grain, and it is cultivated in the United States as a forage crop, also in the East and West Indies and in Southern Europe. India is its native country.

Dyes include Anatto, Brazil wood, cochineal, cutch, galls, garancine, indigo, lac, logwood, madder, myrabalans, Nicaragua wood, sepia, sumach, Terra Japonica, turmeric and valonia (q. v.).

Ebonite, Black vulcanite, used for combs, buttons, insulating material in electric apparatus, etc.

Ebony, a black, very hard wood obtained from the heartwood or inner part of the trunk of various trees of the order (Ebenaceae). It is much used by cabinet-makers; also for making piano-keys, door knobs, knife handles,

Eiderdown, the softest and most valuable down that exists, is the product of the Eider duck which robs its own breast of feathers in order to provide a soft bed for its progeny. The fowlers seek the down on the almost inaccessible rocks of the coasts of Ireland, Lapland, Nova Zemlya and Spitzbergen.

Ejoo Fibre, the fibre obtained from the (Arenga saccharifera), a kind of palm which grows in the East Indies. On account of its durability it is used for making cordage and cables.

Elaterium, a cathartic (the most powerful known), obtained in the form of yellowish or greenish cakes, as the dried residue of the juice of the wild or squirting cucumber (Ecballium elaterium). The active principle is elaterin.

Elecampane, a large, coarse asteraceous herb, with yellow flowers. It is a native of Europe but is established in the United States. The pungent root is used in making a tonic.

Elemi, a fragrant oleoresin obtained from various trees, used in making varnishes; also medicinally in ointments and plasters.

Emery, Corundum in grains or powder, used for grinding and polishing hard substances.

Ergot, a fungous disease of rye and other cereal, in which the grains are replaced by black or purple clubshaped bodies. Ergot contains several poisonous compounds. It is used medicinally.

Ermine, a fur-bearing animal of Northern Asia, Europe and America, allied to the weasel. It summer it is brown, but in winter becomes white, except the tip of the tail, which is always black. Fur of the ermine is used for trimming robes of royalty, etc.

Esparto, a strong kind of grass found in Southern Europe and Northern Africa, is used for making baskets, cordage and paper.

Ether, a light, volative, mobile, inflammable liquid, obtained by distilling alcohol with sulphuric acid, and used as a solvent of fats, resins, etc., and as an anaesthetic.

Eucalyptus, a myrtaceous genus of trees, mostly Australian. Many species secrete resinous gums, and others yield oils, tars, acids, dyes and tans. Some eucalyptus oils are used in perfumery.

Euphorbium, a yellowish or brownish, very acrid, gum resin derived from an African plant; formerly employed medicinally, but now used chiefly in veterinary medicine.

Faience, glazed earthenware, decorated in color. Farina, fine flour made from cereal grains or starch

or fecula of vegetables; used in cookery.

Fennel, a perennial plant having very finely divided leaves and cultivated for its aromatic seeds. It is grown extensively in Europe and Asia. The oil obtained from the seeds is valuable in medicine.

Fenugreek, an annual Asiatic fabaceous plant, cultivated for its aromatic mucilaginous seeds, formerly used in medicine and still used by veterinarians. The seeds are in medicine and still used by veterinarians. The seeds are largely used as a condiment in India and in the manufac-

ture of curry powder.

Fibre, any tough substance composed of thread-like tissue, whether of animal, vegetable or mineral origin, and capable of being spun and woven; as wool or silk fibre, hemp or flax fibre; asbestos or glass fibre. Vegetable fibre is of great commercial importance, and is yielded by the bast of many different plants.

Fireclay, Infusible clay, free from lime, iron or an

alkali, used for fire-brick.

Flavine, a preparation of the coloring matter of quercitron, containing quercitrin, quercetin, etc., in varying amounts. It is obtained from a species of oak and used for dying wool.

Flax, a plant of the genus Linum, commonly cultivated for its fibre. The seed is also of great commercial importance. It grows extensively in Russia, Saxony, Belgium, Holland, Italy and the North of France.

Flock, woolen or cotton refuse, for stuffing up-holstered furniture, mattresses, etc., and for dust for coating wall-paper to give it velvety appearance. Fluorite or Fluor Spar, a compound of calcium and

fluorine is one of the most beautiful of minerals occurring in cubical crystals of nearly all colors, as in the well-known Derbyshire spar. Hydrofluoric acid, used for etch-

ing glass, is obtained from fluorite.

Frankincense, the resinous juice that exudes naturally from (Pinus abies, P. Balsamea ) and (Larix), gradually

hardens on exposure to the air.

Fucus, various species of sea-weed which grow attached to rocks between tidewater levels, found on the northern shores of Europe, Asia and America. It is used as a fertilizer; also in the preparation of iodine.

Fullers' Earth, a chemical compound of silica and water. It is employed in the preparation of wool, for ex-

tracting superfluous fat.

Fulminates, explosive compounds; salts of fulminic acid, as fulminate of gold, fulminate of mercury (a white crystalline compound formed by heating a mixture of alcohol, nitric acid, and mercuric nitrate, and in other ways). Fulminate of mercury explodes violently on percussion, and is used in percussion caps, etc.

Fusel Oil, an acrid, oily liquid of unpleasant odor, accompanying many raw, or insufficiently distilled, alco-holic liquors (as potato whisky, corn whisky, etc.) as an undesirable ingredient. It consists of several higher alcohols, fatty acids, but chiefly of amyl alcohol.

Fustian is a coarse twilled cotton fabric including moleskin, corduroy and velveteen.

Fustic is the wood of a West Indian tree (Maclura tinctoria), Nat. Ord. (Urticaceae), species of mulberry which grows in the West Indies, and yields yellow, olive, brown, and greenish dyes.

Galam Butter, a lard-like substance, obtained by boiling the roots of a species of Bassia, a native of the East Indies. It is used medicinally externally in rheumatism. The seeds of the Basia yield an oil used for illuminating purposes.

Galangal, the pungent, aromatic rhizome of various East Indian or Chinese plants. It is used medicinally, like ginger; also to some extent in the manufacture of per-fume.

Galbanum, a yellowish or brownish gum resin having an offensive smell, derived from certain Asiatic plants. It resembles asafoetida and is used for similar medicinal purposes; also in the arts, and in making varnish.

Galena, native lead sulphide, the principal ore of lead.

It is of greenish color, has a metallic lustre; occurs crystallized in veins in granite, sandstone, limestone, etc. is found in abundant quantities in Great Britain, in most

European countries and in the United States.

Gallic Acid is obtained by applying heat to nut-galls. As gallic acid gives a blue-black precipitate with chloride of iron, it is used in the manufacture of ink and as a developer in photography.

Galls, produced on the leaves and twigs of (Quercus infectoria) in Asia Minor, are imported for the manufacture of gallic and tannic acid used in photography and

the manufacture of ink.

Gambier, an astringent substance much used in tanning and dying is prepared from the leaves of (Uncaria aeida) and (U. gambir), East Indian shrubs.

Gamboge, the gum-resin obtained from a tree growing wild on the coasts of Ceylon and Malabar, supplies a water-color pigment. It is imported from Ceylon, Cochin China and Siam. The name is a corruption of Cambodia, and the substance is a powerful acrid poison.

Garancine, a coloring matter prepared by treating ground madder with strong sulphuric acid. It consists essentially of alizarin. The powder is the Garancine of

Garnet, a mineral or gem, often of deep red color, and harder than quartz, often found as crystals. The garnet of commerce is obtained from Bohemia, Ceylon, Brazil and Peru.

Gauze, a very thin, light, transparent stuff, generally of silk; also any fabric resembling silk gauze. So-called because introduced from Gaza, in Palestine.

Gelatine is an animal substance which dissolves in hot water and forms a jelly when cold. An explosive form is made by gently heating nitro-gylcerine in a water bath and dissolving gun-cotton.

Geneva or Hollands, also called Schiedam, is a spirit distilled from grain and flavored with juniper berries. The

name is a corruption of the French (genievre), a term for

the juniper berry.

Gentian, a herbaceous plant of many species, some prized for their beauty, and others used as tonics.

Geranium Oil, a fragrant essential oil obtained from various species of Pelargonium. It is used extensively in perfumery

German Silver, an alloy of copper, nickel and zinc, silver white in color, is so called because first made in Ger-

Ghee, Indian clarified butter, is generally prepared from buffalo milk

Gingham, a kind of cotton or linen cloth, usually in stripes or checks, of two or more colors, the yarn of which is dyed before it is woven.

Ginseng, yielded by a species of (Pancz), Nat. Ord. (Araliaceae), growing in the north of China and Manchuria, is highly esteemed as a restorative medicine by the Chinese, though it possesses no active medicinal properties whatever.

Girasol, an opal of varying color, which gives out firelike reflections in a bright light; hence called also fire opal.

Glauber's Salt, Sulphate of Soda, formed of compact, white, massive crystals, which effervesce rapidly. exposed to the air the crystals resolve into a white powder, which has a bitter and saltish taste. It enters into the composition of several mineral waters. In a purified state is it used medicinally.

Glucose, the peculiar kind of sugar contained in the juice of fruits, and also the sugar obtained by the action of sulphuric acid upon starch, is used in brewing.

Glycerine, a sweet, syrupy liquid, colorless an odor-less, obtained from natural fat and oils, which are com-pounds of it with various acids. It is used as an ointment and for many other purposes, and in very large amounts for the manufacture of nitroglycerin.

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Gold-beater's skin, the prepared outside membrane of the large intestine of the ox, used for separating the leaves of metal in goldbeating.

Gold Leaf, Gold foil, or a leaf of gold, of extreme thinness, used for gilding, etc. It varies ordinarily from 1-2000000 to 1-2500000 of an inch in thickness.

Gram, the chick-pea used in India for food.

Graphite, or plumbago, an iron-black or steelgray mineral, familiar as the so-called "black lead" of pencils, is a form of carbon, so soft as to be easily cut with a knife and with a specific gravity just above 2. Graphite is useful as a lubricator, when pulverized; and it is mixed with clay in the manufacture of crucibles. Much commercial graphite is obtained from Siberia; and there are large deposits in Canada and Newfoundland.

Grass Oil, an oil derived from certain plants; some

varieties used for medicine, others are a table oil.

Greenheart, the wood of the beleeru, used for shipbuilding or turnery; also the tree. The name is derived from the color of the wood. The bark is used medicinally.

Grindstone, a flat, circular sandstone, revolving on an axle, for grinding or sharpening tools. The best natural stones are obtained in Staffordshire. Artificial stones, made by combining grains of sand with silicate of lime, are now largely used in place of the natural stones.

Ground-Nuts, any of several plants having edible tuberous spots; also useful commercially on account of

the oil they contain.

Guaiacum, a small crooked tropical American tree: also the resinous substance of a West Indian tree, which flows from the stem; used in the preparation of various powders, pills and tinctures.

Guano, the more or less fossilized dung of seabirds, is collected on the islands of Peru and Chile; and on Mal-

den in the Pacific Ocean.

Guava, a tropical, American tree, or its astringent fruit, used to make jelly. The wood of the tree is used by cabinet makers. Several varieties are cultivated.

cabinet makers. Several varieties are cultivated.

Guiana Bark, the bark obtained from a species of tree grown extensively in French Guiana. It is medicinally

valuable, containing powerful febrifuge alkaloids.

Gums, the thickened juices of certain plants soluble in water, but not in alcohol, include Gum Arabic and gamboge. Gum Arabic flows naturally from the trunks and branches of (Acacia vera), and (A. arabica), Nat. Ord. (Leguminosoe), which grow in abundance in Arabia, in Egypt and on the banks of the Nile. It is exported from Aden, Mocha, Suez, Cairo and Alexandria. Gum Senegal, transparent as glass, is the best and most expensive of Arabian gums. Gum Tragacanth, yielded by (Astralagus tragicantha), is exported from Smyrna. These gums are principally employed in the manufacture of silk, crape and muslin to stiffen and glaze the fabrics. They are also used in calico printing.

Gun Cotton, a highly explosive nitric ether of cellulose, obtained by steeping cotton in nitric and sulphuric acids. It is used for blasting and sometimes in gunnery, for making celluloid when compounded with camphor, and

for other purposes.

Gunjah, a narcotic drug obtained from the flowering tops of the Indian hemp plant. The cultivation is almost entirely confined to a small tract in Bengal. About 1,000,000 pounds are produced annually.

Gunny Bags, bags of strong, coarse sacking, made from the fibers (called jute) of two plants of India.

Gurjun Balsam, a thin balsam or wood oil procured

Gurjun Balsam, a thin balsam or wood oil procured from various trees in Bengal, India. It is used in medicine and as a substitute for linseed oil. In tropical Asia it is used as a varnish.

Gutta Percha is the resin of (Palaquium gutta), a magnificent tree of the Nat. Ord. (Euphorbiaceae), growing in the Malay Archipelago. It is employed chiefly in the construction of submarine telegraph cables.

Gutta Siak is a reddish brown substance, the latex or sap of certain trees and shrubs found in the Malay Archipelago. It is imported largely into this country for use as adulterant in combination with gutta percha.

Gypsum, the hydrated calcium sulphate, is a soft mineral easily scratched with the finger nail. The variety known as Selenite, or Moonstone, is transparent; a commoner form is Alabaster. On heating any of these substances the water is driven off and the substance falls into powder, the well known Placter of Paris which on being united with the proper quantity of water sets hard, forming the substance we know so well in plaster casts.

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Hartshorn, Horn or antler of the hart or male red deer; spirits of hartshorn, a solution of ammonia in water; volatile salts.

Hellebore, a perennial herb of the Crowfoot family, the powdered root of which is used as a cathartic. The

roots are imported into England from Marseilles.

Hematite, the red oxide of iron, the most important ore, containing 70 per cent of metal, occurs in kidney shaped masses. Varieties of this ore are Specular Iron, so lustrous as to reflect light; and the pigment Red Ochre. Red Hematite is found largely in England; and Brown Hematite, a hydrous oxide, occurs in Cumberland and yields about 60 per cent of metal.

Hemp, a plant of the Nat. Ord. ((Urticaceae) has been cultivated from a remote period in temperate climes for its fibre, which is longer and stronger than flax, and from which sail cloth, sacking and cordage are manufac-

tured

Henbane, a poisonous plant, whose leaves are used like belladonna; called also, stinking nightshade. It is sometimes called black henbane. It is especially poisonous to fowls.

Henequen, the fibre known as Sisal Hemp, of the agave or maguey, grows in Mexico, Yucatan and the Bahamas. It does not rot in sea water, and is valuable for

ships cables.

Henna, a thorny shrub, whose fragrant blossoms are used by Buddhists in religious ceremonies. The powdered leaves furnish matter used in the East for staining the nails and fingers, manes of horses, etc. It is of a reddish brown color. It is cultivated extensively in Egypt.

brown color. It is cultivated extensively in Egypt.

Holland, a coarse unbleached linen fabric used for covering furniture. The name was originally applied to a

fine linen first made in Holland.

Hornbeam, an European tree, with smooth gray bark and hard white wood, the leaves resembling those of the beech. The wood is used in the manufacture of agricultural implements. When burned it produces good charcas!

Huckaback, a strong fabric of linen, or linen and cotton, sometimes figured, having an uneven surface produced by alternately crossing the weft threads. It is much

used for towels.

Hydrochloric Acid, a colorless, incombustible gas that fumes strongly in moist air. It is usually prepared from common salt by the action of sulphuric acid. It is an indispensable agent in commercial and general chemical work.

Hydrochloric Acid or Spirit of Salts, is prepared by heating common salt and sulphuric acid; but enormous quantities are obtained as a by-product in the manufacture of sodium carbonate; and are used for bleaching purposes. It is also known as Muriatic Acid, from (muria), meaning brine

Hydrogen Peroxide, a transparent colorless liquid. It has no smell, but possesses a bitter taste. It bleaches many of the vegetable colors, and is much used for the

hair.

Hyssop, an European mint with highly aromatic and pungent leaves, often cultivated in gardens as a family remedy for bruises. The leaves are sometimes used as seasoning for culinary purposes. A syrup made from hyssop is recommended for colds.

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Iceland Moss, a nutritive and medicinal lichen found in northern latitudes.

Iceland Spar, a glassy substance—sometimes found associated with metallic ores and often in connection with limestone and other rocks. It is used in making polarizing instruments on account of its peculiar quality of double refraction.



Ignatius Beans, the seeds of the (Ignatia amara), a tree closely allied to the Nux Vomica, indiginous to the Philippines. They contain a large amount of strychnia.

Indigo, an Indian shrub of the Nat. Ord. (Leguminosae) from which the dye is obtained by decomposing the plants of (Indigofera, tinctoria, 1. anil) and (1. coerulea), when the coloring matter, which sinks to the bottom, is dried and cut up in cakes. The plants are principally grown in Bengal, Java, the Philippine Islands, Egypt, the West Indies and British Honduras; but by far the finest quality and the greatest quantity is imported from

Indium, a metallic element of the same group as platinum, which it much resembles, being silver-white, but harder and brittle, found native in the Ural Mountains; also sometimes as an allow with Osmium. It is rare and very expensive. Its alloy with osmium is used for compass bearings and for tipping gold pens, chemical vessels, etc.

Iodine is obtained from "caliche" or crude sodium nitrate (cubic nitre) produced in Peru and Chile. The largely used antiseptic, Iodoform, a yellow solid, is prepared by the action of Iodine and caustic potash upon alcohol.

Ipecacuanha, an important emetic medicine is yielded by the roots of (Cephalis ipecacuanha), a small perennial plant of the Nat. Ord. (Cinchonaceae) growing wild in Brazil and cultivated in India.

Iridium, the most infusible and one of the heaviest of the metals, found associated with platinum, is so called from the iridescence of some of its solutions.

Iridosmium is the native alloy of iridium and osmium

used for the points of gold pens.

Irish Moss (Carrageen in its dried and bleached form). A cartilaginous seaweed found on the coasts of Northern Europe and North America. When boiled with milk a stiff jelly is formed which possesses great nutritive properties. It is useful also in the manufacture of paper. cloth, felt, filling mattresses, etc.

Iron Wood, any tree with unusually hard, strong, or heavy wood; also the wood itself, which is very close grained and sinks in water. The wood of the (Vepris undulate), a South African tree, is called White Ironwood. It is largely used for axles, plows and other agricultural implements. Other species are used for furniture.

Isinglass, a substance prepared from the air-bladders of the sturgeon, is used in the clarifying of white wines and malt liquors; also in cookery. Russian Isinglass is better than that produced in Hungary and Germany.

Istle, the strong flexible fibre obtained from the Mexican tree (Bromelia sylvestris), known as Mexican

Grass. It is valuable for brush making.

Ivory, the hard, creamy-white, opaque, fine-grained substance which composes the tusks of elephants; also the dentine of the tusks of other large mammals. The ivory of the elephant tusks is particularly valuable for the manufacture of billiard balls.

Ivory, Vegetable, the so-called Ivory obtained from the nuts of a species of palm tree, which grows in the Andean plains and along the banks of the Magdalena. The nuts are known in commerce as Corozo Nuts. The kernels contain a substance very hard and white when the nuts are ripe which closely resembles ivory in appearance. This substance is used in the manufacture of buttons, handles, knobs for doors, toys, etc., and for inlaying work.

Jaborandi, any of several South American rutaceous shrubs, the leaves of which are used medicinally.

Jacaranda, the name given to many species of rose-wood trees native to Brazil. The handsome mottled wood is very hard. It is extensively used by joiners and cabinet-makers.

Jaconet, a thin cotton fabric having a glazed finish on one side, originally made in India, classed between cambric and muslin, and used for dresses, infants garments, etc.

Jade, a dark green stone used for ornamental purposes is found in Burmah and New Zealand

Jaggery, a kind of coarse sugar made in the East Indies by evaporation from the fresh sap of any of several palms, as the jaggery palm, the palmyra, the date palm, and the coco-palm.

Jalap, the tuberous root of a Mexican plant, or the abstract, extract, or powder prepared from it and used as a purgative. It derives its name from the City of Jalapa,

where it is found in large quantities.

Jamun, the fruit of an Indian plant, a species of long dark colored plum. A liquor is obtained from the fruit by distillation. It also makes an excellent preserve, the flavor being somewhat similar to that of black currant jelly.

Jarrah is the most valuable tree found in the forests Western Australia. It is sometimes called Australian mahogany and is a species of eucalyptus, attaining a height of from 90 to 100 feet, the finest forests occurring within 20 to 30 miles of the sea and on soils impregnated with iron. The timber is successully employed for boats, bridges, furniture, railway sleepers and street paving.

Jasper, employed by jewellers for seals, is a hard

siliceous mineral varying much in color.

Jean, a twilled cotton cloth, used for undergarments.

overalls, etc.

Jelutong is a whitish gum, similar in appearance and derivation to the crude rubber gum. It is produced in the Malay Archipelago, and imported into this country in considerable quantities to be used in combination with India rubber as an adulterant.

Jet, a bituminous substance resembling cannel coal, but with a blacker hue and more brilliant lustre, occurs in the aluminous shale of the Upper Lias at Whitby, in the Alps, Asturias, Languedoc, Galicia and Massachusetts.

Jew's Ear, an ear-shaped or cup-shaped fungus (Excidum auricula Judae) which grows on the decaying parts of living trees. An edible species is found in Japan and China.

Job's Tears. the hard pearly-white, sheaths of an Asiatic grass, often sold as beads or strung in necklaces; also the plant itself, which is frequently cultivated; chrysolite found with garnets in some locali-

Jowari, the large seeded millet (Sorghum valgare) grown very extensively in India. It is used as an edible by the natives and exported in large quantities for fodder.

Juniper, any evergreen pinaceous shrub or tree of the genus Juniperus. The blue, berry-like fruits of common juniper have a warm, pungent taste and are used to flavor gin. The oil of juniper is acrid, and is employed in

making medicine; also in the manufacture of varnish.

Jute, a valuable Indian fibre, yielded by (Corchorus capsularis), an annual of the Nat. Ord. (Tiliaceae), is of great length and satin-like lustre. Sometimes mixed with silk in the manufacture of cheap satins, its principal use is in making coarse canvas, or gunny. Cotton, dyestuffs, oilseeds, rice and sugar are all exported from India in gunny bags.

Juvia, the Brazil-nut tree.

Kaat, an Arabian shrub cultivated by the Arabs for its leaves, which are used in preparing a stimulating beverage similar to tea.

Kainite, a mineral which occurs impure in irregular granular masses, especially in the Strassfurt deposits of Germany, the color being white, gray, pink, violet, or black. The natural salt averaging about 12 per cent potash, is used as a fertilizer.

Kamala, an orange-red powder from the capsules of an East Indian euphorbiaceous tree. It is used for dyeing silks and also as a vermifuge.

Kaolin, the almost pure clay used in the manufacture of porcelain, is supplied by the decomposition of the feldspar of granite, especially when the mineral contains soda.

Kapok, or vegetable down, the cottony or silky fibre covering the seeds of a species of silk-cotton tree, is used for stuffing pillows.

Karri, a timber-tree of Western Australia, one of the (Eucalyptus) genus, Nat. Ord. (Myrtiaceae), sometimes



attains a height of 300 feet. Forests of this magnificent tree are found in a well-watered district surrounding Geographe Bay, near the southwestern angle of the continent. The timber is applied to the same uses as Jarrah, and for street paving is preferred, as its surface does not wear so

smooth under heavy traffic.

Kauri Pine, the largest tree of New Zealand, Nat. Ord. (Coniferae), yields good timber for building purposes and resin for making varnish, called a kouri-gum. The best "gum" is found in a semi-fossil state beneath the

trees, or in the ground where they once stood.

Kekune Oil, an odorless, tasteless oil, obtained from the seeds of the (Aleuritis tribola), by boiling them in water. It is used medicinally.

Kelp, the ashes of seaweed, formerly much used in the manufacture of glass and soap; now used in the manufacture of indine.

Kermes, a scarlet dye-stuff, is furnished by the bodies of the female species of Coccus, found on (Quercus coccifera) of Southern Europe.

Kingwood, a handsome Brazilian wood, called also Violet wood, from the color of its markings. Kingwood is used in fine cabinet work.

Kino, a dark red or blackish resin obtained from various tropical trees. It is commonly used in medicine as an astringent, and sometimes in tanning and dyeing.

Kokra Wood, the wood of a certain variety of Indian Elder tree. The wood, which is very hard and of a rich deep brown color, is extensively used by turners in the East and in Europe in the manufacture of musical in-

struments, especially flutes.

Kokum Butter, a fixed oil obtained from the seeds of a small East Indian tree (Garcinia indica) used to adul-

terate melted butter in India.

Kola-Nuts, the fruit of an African tree, possess stimu-

lating properties.

Kolinski, any of several Asiatic minks, (Putorius sibiricus), the yellowish pelt of which is valued, especially for the tail, which is used for making artists' brushes. In commerce the fur is called red sable and Tartar sable.

Koumiss, an intoxicating fermented liquor, originally made by the Tartars from mares' or camels' milk. It can be prepared from any kind of milk and is now largely used from cow's milk in Europe and the United States, with a very slight percentage content of alcohol, as a feed. drink or beverage.

Kukui Oil, the oil obtained from the nut of the Candlenut Tree (Aleurites tribloa), a tree of the Pacific Islands. The oil is used by the islanders for lighting purposes; it is also imported to a small extent for its drying properties when mixed with certain acids.

Kundah Oil, the fixed oil obtained from a West African tree (Carapa guineenis). It is used locally for lighting and is sometimes used medicinally.

Kuskusse, the sibrous roots of the (Andropagon muricatus), an East Indian grass. The oil obtained from the roots is used in the manufacture of perfumes.

Labdanum or Ladanum, the delicately scented gum which exudes from the (Cistus creticus), growing in Crete, Cyprus and Asia Minor. At one time it was used medicinally, but now used in perfumery

Lac is the exudation found on the bark of the Indian fig and the Banyan fig when punctured by the lac insect. A scarlet dye is extracted from lac, and it is mainly used in the manufacture of sealing wax.

Lacquer is a varnish made of lac and alcohol.

Lapis Lazuli, a mineral of a beautiful blue color used in ornamental and mosaic work and for sumptuous altars and shrines, is found in China, Persia and Siberia. Ultramarine was formerly made of this substance.

Lancewood, a tough, elastic wood, often used for shafts, archery bows, fishing rods, cabinet work, etc. tropical American annonaceous tree (Aberemoa quitarensis) furnishes most of the Lancewood of commerce.

Lanoline, wool fat or wool grease, especially in a purified condition. It is a fat-like substance, consisting chiefly of the esters of cholesterin with certain higher

fatty acids. Lanoline is prepared commercially from wool as a yellowish-white unctuous mass, miscible to a certain extent with water. It is much used as a basis for ointments.

Larch is a tree of the Nat. Ord. (Coniferae), bearing deciduous leaves. The wood is largely used for railway sleepers and scaffold poles; and the larch of Italy vields Venice Turpentine.

Laudanum, formerly any of various preparations of opium; now only tincture of opium. It is a powerful ano-

dyne and soporific.

Lawn, fine linen or cambric, is used for ecclesiastical vestments, etc.

Lentils, a small leguminous plant, common in the fields in Europe; also its seed, used for food.

Letterwood, a beautifully mottled wood procured from a large tree belonging to the bread fruit, which grows in British Guiana and Trinidad. It is used by cabinet-makers for fine veneering and for inlaying work; takes a fine polish.

Licorice, consists of the roots of (Glycyrrhiza glabra), Nat. Ord. (Leguminosae), a perennial plant growing in Spain, Italy, Sicily and in the Caucasus Mountains. It is exported from the Spanish provinces of Aragon, Catalonia and Valencia in sticks and bars under the name of Spanish juice. Now beig imported into the United States in large quantities via Vladivostok and Se-

Lign Aloes, the wood of the Aquilaria Agallocha, which grows in further India. When burned the wood has

a pleasing odor.

Lignite, a variety of coal intermediate between peat and bituminous coal, especially one in which the texture of the original wood is distinct.

Lignum Vitae, the hardest and heaviest wood known, of a dark olive color, chiefly used for ship blocks and pulleys.

Lima Wood, an important soluble red wood used in dyeing, obtained from the (Caesalpinia echinata), a tree which grows in Brazil and Central America.

Linoleum, a kind of floor cloth made by laying hardened linseed oil mixed with ground cork on a canvas backing. It is waterproof and durable.

Linseed, the seeds of flax, flaxseed. An important oil

is extracted from the seeds, which is much used in the manufacture of varnishes, printing ink, oil-cloth, etc., on account of its drying properties.

Lint, linen scraped or otherwise prepared by machine and made into a soft downy substance used for surgical

dressings.

Liquidambar, a tree of the balsam order. Several species yield a resinous substance from which benzoic acid is procured. Some species are used for scenting tobacco, driving moths from clothing, etc. The ordinary balsam is collected in the United States and Mexico and exported for commercial purposes.

Litharge, the scum or foam of silver; litharge is found in silver-bearing lead ore. A yellowish red substance, obtained in hard or scaly crystalline masses by heating lead moderately in presence of air. Sold in the form of flakes or powder and used in making flint glass, in glazing earthenware, drying oils, etc.

Lithium, an alkaline metallic element, the lightest solid element known. The oxide of lithium is used in the preparation of a series of salts which are used medicinally. Lithium is found in combination with various minerals in Sweden.

Litmus, a dyestuff extracted from certain lichens; being turned red by acids and restored to its blue color by alkalies, it is a test for acidity and alkalinity.

Llamas, the camels of South America, inhabiting the slopes of the Peruvian and Chilean Andes, about the size of a deer, yield valuable wools, namely (Llama pacos), alpaca; (l. vicuna), vicuna.

Logwood, Nat. Ord. (Leguminosae) one of the best deep red and black dyes, is imported from Central America and the West Indies.

Longan, a pulpy fruit related to the litchi; a very delicious fruit produced by the (Nephelium Longanum),



a tree which grows in China and the Malay Archipelago. In its dried state it is exported from China to Great Britain.

Longcloth, a cotton fabric chiefly used for shirting, differs from calico insomuch as the warp and woof are

Lucerne, a valuable forage crop, is a species of (Medick), Nat. Ord. (Leguminosae).

Lunkah, a species of tobacco grown in Ceylon and on the banks of the Godavery. It contains a large amount of nicotine

Lycopodium, a fine yellowish powder composed of the spores of various species of Lycopodium. It is highly inflammable and is used in the manufacture of fireworks and the representation of lightning; also in medicine as a coating for pills and as an absorbent in abrasions of the

Lynx, several species of wild-cats. The American Lynx is the Canada Lynx and allied varieties. This variety is large has very long fur, color varying from pale grayish buff to tawny spotted with black. The fur is used for rugs, muffs, etc. and is easily dyed. The Canada Lynx furnishes the fur of commerce.

Mace, the arillus of the nutmeg.

Madder is a red dye extracted from the roots of (Rubia tinctoria), Nat. Ord. (Rubiaceae). The roots are produced whole in India, Turkey, Greece, Spain and France; ground from Holland and Germany. Every shade of red, purple and lilac can be obtained from madder. A dye, called Garance, or Garancine, is extracted from the

Magnesia is the name applied to the oxide and chloride of the unstable white metal Magnesium, used to obtain a brilliant white light for photographic and other purposes. The chloride is obtained when the metal is burnt in air. The hydrated sulphate is familiarly known as epsom salts.

Magnesium, a silver-white metallic element, malleable and ductile and light. It occurs abundantly but always in combination; also in natural waters and in organic products, especially seeds and bones. When the metal is made into ribbon, wire and powder it burns with a brilliant light, which is used in signaling, in fireworks and in photography.

Magnetite, an important ore of iron, containing 52 per cent of metal, occurs principally in Norway, Sweden, Russia and the United States (Pennsylvania and New

Mahaleb, an European cherry with small red inedible fruit, from which a violet dye and a cordial are prepared. The wood is used by cabinet-makers and the flowers and young leaves are much used as a grafting stock for cultivated cherries.

Mahogany, the timber of (Swietenia mahogani), Nat. Ord. (Cedrelaceae), one of the loftiest and most gigantic trees of the tropics, is a native of the West Indies and Central America. "Spanish" Mahogany is produced in Cuba, Haiti and Jamaica; Honduras mahogany in Belize.

Malachite, native hydrous carbonate of copper admitting of a high polish. The compact variety is used for table tops, etc. Called also green malachite to distinguish

it from blue malachite, or azurite.

Manganese, a metal much like iron obtained principally from its two oxides, Pyrolusite, the black oxide, and Manganite, the red oxide, occurs in nearly all rocks largely associated with iron, zinc or silver. Manganese is employed as an alloy of iron in the manufacture of steel, and pyrolusite is used to color glass and pottery purple. brown and black.

Mango is a fruit of an East Indian tree, used in the preparation of chutney; or a green muskmelon pickled.

Mangold-Wurzel, the different varieties of the field beet, cultivated for fodder. It is larger in all its parts and coarser than the garden beet. It is cultivated in America and Great Britain on a large scale.

Mangosteen, a well-known East Indian tropical fruit. It is dark reddish brown in color, with a thick rind en-closing a number of carpels like those of an orange; the flavor resembles that of both the peach and the pineapple. The rind is tough and purple in color and contains a valuable tannin, much used in medicine.

Mangrove Bark, the bark of a large variety of tropical American trees, containing an abundance of tannin and dyestuffs. It is exported to Great Britain and France.

Manilla Hemp, the fibre of (Musa textilis). Nat. Ord. (Musaceae) is used in India for the manufacture of fine muslins and the elegant Manila hats. The white rope of Manila hemp is the fibre of the wild plantain of the Philippines.

Manioc, Cassava or Mandiaco Meal, an important article of food in the tropics, especially of South America, is afforded by (Manihot utilissima), Nat. Ord. (Euphorbiaceae). Tapioca, the fine starch which settles down from the water used to wash cassava, is granulated upon hot plates.

Manna, the sweetish exudate of the European flowering ash and of several related species, obtained in the form of flakes, or as a viscid mass. Manna is used medic-

inally as a gentle laxative and expectorant.

Manures, or the mineral substances used to enrich the soil as plant food, may be divided into three groups: Limestone, gypsum and phosphates. Limestone, the carbonate, in the form of burnt lime, is spread upon the soil; Chalk, unburnt, is applied to clay and sandy soils; and Marl, a clay containing quantities of fossil shells is of local use as a fertilizer. Gypsum has an important use as a fertilizer, being widely distributed and frequently associated with salt. Two classes of Phosphates are recognized. nized; the mineral phosphate and rock phosphate resulting from deposits of guano, bonebeds, etc. Guano is a form of rock phosphate, resulting from the accumulated excrement of sea fowl on rocky shores and islands. Rock phosphates are immense accumulations of the remains of fossil animals, which have been converted into mineral substances. The remains appear to have accumulated in estuaries. Artificial manures are prepared from the refuse of fish and other animals, especially bones.

Margarine, the solid ingredient of fat, so called from its pearly lustre, is made into imitation butter, chiefly in Holland and the United States.

Marjoram, any mint of the genus Origanum. The common sweet marjoram is very fragrant and is used in cookery for flavoring. The wild marjoram is found in both Europe and America.

Mastic, the gum-resin of the lentisk tree, a native of the Levant, particularly abundant in Chios, is obtained by

making incisions in the stem and branches.

Mate, Yerba—or Paraguay Tea—consists of the leaves of a South American Holly which grows in Brazil, Argentina and Paraguay.

Matico, a Peruvian piperaceous plant, also its leaves, which are aromatic and stimulant, and used in medicine

as a styptic.

Maw-Seed, the seed of the opium poppy; commonly used as a food for certain cage birds.

Mead, a fermented drink made of water and honey

with malt, yeast, etc. Also one made from manna.

Medlar, a small Asiatic tree, widely cultivated, especially in Europe. The fruit of the tree resembles a crab-apple, but is not edible until it begins to decay. It is much used for preserves.

Meerschaum, a fine white, claylike mineral. mineral manufactured into tobacco pipes, cigar-holders,

etc., comes chiefly from Asia Minor.

Menthol, an anodyne—a kind of camphor obtained from oil peppermint; used locally in neuralgia and rhin-

Menhaden, a fish of the Herring family; very abundant on the Atlantic Coast, occurring in enormous schools; ti is not much esteemed as food, but scores of millions are taken annually and converted into oil and fertilizer.

Mercury, or Quicksilver, the only mineral except water and bromine that remains liquid at ordinary temperatures, becomes solid at 40 F. Nearly all the world's supply of mercury is obtained from Cinnabar, the sulphide, a red mineral, yielding vermilion, which is mined almost exclusively at Almaden, New Castile, Spain; at Idria in the Austrian crownland of Corniola, and at New Almaden

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and New Idria in California. In addition to its employment in the construction of barometers and thermometers. mercury forms amalgams with gold, silver, zinc and tin.

Merino Wool, is obtained from the fleece of the migratory sheep of Spain, a breed now reared in Saxony,

Australia and South Africa.

Mica, an important mineral, one of the constituents of granite, gneiss and mica-schist, distinguished by its perfect cleavage, is a silicate of alumina, with potash, magnesia and iron, or more rarely soda. Muscovite, the commercial variety, is a potash mica, generally known as "white mica," or "Siberian glass" from the country supplying it. Biotite, the so-called "black mica," is a magnesiairon form. Tale is a similar mineral, and both are used as substitutes for glass.

Millet, Nat. Ord. (Gramineae), is cultivated as a grain for feeding poultry, as a substitute for rice, and as a forage crop. There are several kinds, as common or German millet, Polish millet and Indian millet, a large variety.

Millstones, either of two circular rollers, manufactured from buhn stones, used for grinding grain and other substances.

Mimosa Bark, (Wattle Bark) the Astringent bark derived from various Australian Acacia, used in tanning.

Minerals are inorganic substances found at or under the surface of the earth. The commoner rock-forming minerals are Apatite, calcium phosphate; Calcite, calcium carbonate, next to Quartz the most abundant mineral in the world; Coal; Fluorite, or Fluor-Spar, also a calcium compound; Feldspar, after quartz and calcite the most abundant rock-forming mineral, a silicate of aluminum, whose decomposition results in the formation of clay; Hornblende, or Amphibole, a silicate of magnesia and aluminum; Mica, a compound silicate of aluminum, etc., and Quartz, the most abundant mineral, or silica, the substance of sea sand.

Minium, the red oxide of lead, is largely used in the

manufacture of glass.

Mink, an animal of Northern Europe, Siberia and North America, related to the weazel, but larger and having partially webbed feet; the soft thick fur is very valuable commercially.

Mirbane, an imitation of oil of almonds. stance prepared by treating benzole, a by-product of petroleum, with nitric acid. It is used in the manufacture of

Mohair, the product of the Angora Goat inhabiting

the mountains of Asia Minor.

Moire, a watered, clouded or frosted appearance on

textile fabrics or metallic surfaces.

Mora, the valuable chestnut-brown timber obtained from the gigantic Mora excelsa, a tree of British Guiana, used in shipbuilding and making furniture.

Morocco Leather, prepared from goats and sheeps skins tanned with sumach (q. v.) and dyed with cochineal, indigo, logwood, or barberry as the desired color is red, blue puce or yellow.

Morphia, an alkaloid prepared from opium (q. v.).

Mosaic Gold, an alloy of copper and zinc.

Mother of Pearl, the nacreous layer of the so-called "Pearl Shells," as the Sea-ears and a large species of Top Shell used for ornamental work.

Mudar Bark, the inner bark of the (Calotropis gigantea) an Indian shrub. The fibre of the bark is as strong as hemp, and the shrub yields a milky juice, which when hardened resembles gutta percha. The powdered bark is a medicinal substitute for ipecacuanha used for dysentery.

Mulberry, a tree of the Nat. Ord. (Urticaceae), the leaves of which furnish the food for the silkworm, is grown extensively in the south of Europe and in Asia. The fruit resembles a blackberry in appearance, but is quite different in structure. The bark of the Paper Mulberry of the Polynesian Islands supplies the useful Tapa cloth.

Mum, a beer made exclusively in Germany. made from wheat meal, although some brewers add bean meal and oatmeal to the wheat meal. At one time it was brewed in England.

Mundic, the same as iron pyrites, a compound of sulphur and iron.

Mungo, an inferior quality of material, the waste produced in a woolen mill from hard spun cloth and manufactured into cheap cloth or shoddy.

Musk, a cheap durable fur yielded by the Musk Rat or Musquash of Canada, an animal resembling the beaver in its fur and habits but of much smaller size. The Musk Deer, furnishing the well-known perfume, is found in the mountains in Central Asia and in some of the Islands of the Indian Ocean—Ceylon, Java, Sumatra and Borneo. Tonquin or Tibet Musk is the more valuable kind; Siberian or Russian Musk not being nearly so valuable.

Musquash, an animal or North America, the fur of which is black or brown and used as a good imitation of beaver fur. It is exported to England and other European countries and is made into muffs, furs, capes, caps,

Myall Wood, a valuable wood for the manufacture of whip handles and pipes. It is a hard, fragrant wood of various Australian Acacias.

Myrobalans, imported form Calcutta, Madras and Bombay, are the fruit and galls of a tree closely allied to the maple, much valued by dyers and tanners.

Myrrh, a bitter, aromatic transparent gum, exudes from an Arabian and Abyssinian tree, (Balsamodendron myrra). Nat. Ord. (Terebinthaceae).

Myrtle Wax, a green or yellowish wax obtained from the berries of the (Myrica cerifera) and used for the manufacture of candles. It is produced in South Africa and the western states of America.

Nankeen, or Nankin, is a buff colored cotton fabric,

first made at Nankin in China.

Naphtha, any strong-smelling, inflammable, volatile liquid, obtained by distilling certain carbonaceous materials, and of commercial importance. The use of benzine, one kind of naphtha, for small lamps has disappeared, owing to the cheap production of paraffin.

Naphthalene, one of the chief constituents of coal tar crystallizing in large pearly white plates and melting at 80, is commonly known as "Candle Naphtha."

Natron, a combination of sulphate of soda and chloride of sodium, obtained from the lakes of Egypt and the Caspian Sea. Is also obtained from Virginia and Venezuela, and is also known as trona.

Nephrite, a tough, hard, and translucent mineral found in Turkestan and Siberia, consisting of an anhydrous silicate of magnesia and lime. It is the less valuable kind

of jade used for ornamental purposes.

Neroli Oil, a fragrant volatile oil obtained from orange flowers by distillation and used as one of the principle ingredients in the manufacture of perfume.

Nicaragua Wood, a product of the (Caesalpinia echinata), a tree of Central and South America. The best wood comes from Peru, and is used for red and black It is also called Peachwood.

Nickel, a nard metallic, element of the iron group, nearly silver-white. It was at one time used chiefly as an alloy, but is now used independently for many of the domestic purposes. It is obtained from Germany, Hungary, France and the United States.

Nitrate, or Cubic Nitre, occurs in great abundance in the rainless region of northern Chile. In composition it is a Nitrate of Soda. It is largely used as fertilizer, and constitutes two-thirds of Chilian exports. It is also

used in the manufacture of nitric acid.

Nitre, or Saltpetre, Potassium Nitrate, occurs on the soil of several dry tropical countries, especially in India, the Punjab. It is also prepared artificially. As it contains half its weight of oxygen, which it parts with when heated with carbon, nitre is largely used in the manufacture of gunpowder and fireworks.

Nitric Acid, or Aquafortis, is prepared by heating cubic nitre and sulphuric acids together in iron cylinders, when the nitric acid which distills over is col-lected in stoneware bottles. The acid is largely employed in the preparation of gun-cotton, nitro-glycerine, and dyes.

Nitro-Glycerine is prepared by treating glycerine at a low temperature with a mixture of strong nitric and sulphuric acids. A very dangerous explosive called Nobel's Blasting Oil, is the result; and this, when absorbed by a porus silicious earth known as kiselghur, forms Dynamite, which may be handled with comparative safety.

Novau, a favourite liqueur made of brandy and flavored with oil derived from the kernel of the apricot and

Nutmers are the fruit of (Myristica moschata), of

the islands of the Malay Archipelago.

Nutria is the name applied to the skin of the Coypu rat, a burrowing animal living near the streams of South America. Its fur felts readily and many millions have been imported for the manufacture of hats.

Nux Vomica is a moderate sized tree of the Coro-mandel Coast of India, from whose seeds Strychnine, the most violent poison known, is prepared for use as a vermin destroyer; it is also largely used in medicine.

Oakum, a waste material made from untwisting old rope and rubbing the fibres free from each other. It is principally used for calking the seams of ships.

Ochres, chiefly red and yellow, are mixtures of clay and oxide of iron, used in the manufacture of colors.

Oil Cake is manufactured out of the residue of linseed and cotton seed, after the oils have been extracted and sold as food for cattle.

Oil Palm, a pinnate-leaved palm abounding in West-ern Africa, and yielding a red or yellow drupaceous fruit from the fleshy part of which palm oil is obtained when

boiled. The seeds also contain oil.

Oleomargarine, (see Butter and Margarine).

Oleo Oil, an oil compounded of oleic and glycerine, which is extracted from beef suet. A large quantity is exported from the United States to Holland and Germany,

where it is used in manufacturing margarine.

Olibanum, a gum resin obtained from the (Boswellia thurifera) and other species of Boswellia, found in India and south Arabia and Somali Land. It is used as a fumigant and possesses an aromatic odor when burned. also used as incense in religious worship, and medicinally as an ingredient in the manufacture of stimulating plasters.

Opal, a precious stone, the color of which varies from white to red, green, or grey. It is used as jewelry for setting in rings and brooches. The finest stones are obtained from Hungary, Saxony, Queensland and South America

Opium, a narcotic drug, the dried juice of the opium poppy, Nat. Ord. (Papaveraceae), yields the well known medicine Laudanum, and the poisonous alkaloid Morphia, largely collected in Asia Minor, Turkey, Egypt, Persia and India.

Opodeldoc, a soap liniment, used as a plaster for external injuries, compounded of hard soap, camphor, oil of rosemary, rectified spirit and distilled water.

Opopanax, a gum resin procured from the (Opopanax chironium), a species of parsnip produced in Southern Europe and Persia. The odor resembles that of myrrh and is sometimes used medicinally as an antispasmodic.

Opossum, an animal hunted for its fur. Found in various parts of America, and exported in great quantities to England. The skins are made into chest protectors, and also employed in the manufacture of gloves.

Orchella, the blue dye known as Orchil or Archil. is yielded by various lichens, found on the rocky coasts of the Mediterranean islands, in the Canaries, Madagascar, the Cape and South America.

Orchil, (See Archil).

Organzine, a kind of double-thrown silk. The reel threads of silk are twisted into "singles" but when two or more of these singles are twisted together in contrary directions it is called organzine.

Ormolu, a composition of copper and zinc made to resemble gold, and used for casting into ornaments.

Orpiment, the trisulphide of arsenic, as a golden yellow mineral, see under Arsenic.

Orris Root, the root of a plant grown in Tuscany, called (Iris florentia) and valuable in the manufacture of perfumes and in scenting hair and tooth powders. It is also used for flavoring liqueurs.

Osiers, the twigs of various willows used for furniture and basket making. The common osier widely cultivated for this purpose is the European (Salix viminalis), found

in Britain and other parts of Europe.

Osmium, the bluish or grayish metal, always associated with platinum, and alloyed with other metals, especially iridium. It is the heaviest substance known, its specific gravity being 22.5.

Osnaburg, a coarse linen fabric, resembling canvas. The name of the material is derived from the fact that it was originally manufactured at Osnaburg, in Germany.

Oxalic Acid is prepared by the action of caustic potash upon sawdust. It is a compound of carbon, hydro-gen and oxygen commonly called "Salts of Lemon," used for bleaching purposes, cleaning straw hats and removing ink stains by converting them into oxides of iron, which can be washed out.

Ozokerite, or mineral wax, found chiefly in Austria-Hungary, is used in the manufacture of candles, and as a substitute for beeswax and vasaline. It is also employed as an insulator for electric work.

Paddy is the name given to rice in the husk.

Palisander Wood, timber of (Dalbergia nigra) and several other Brazilian trees, used in making furniture.

Palladium, a rare metal of the Platinum group of white and hard substance used in the construction of philosophical instruments, and small weights.

Palm Oil is yielded by the pericarp of the fruit of (Elais guineensis), a native of the west coast of Africa. The kernels yield Palm-Nut Oil, which closely resembles cocoanut oil; and they are imported for the manufacture of cattlecake. Palm Oil is used chiefly for making yellow

Paraffin Wax is formed by the dry distillation of coal, wood and rock oil or petroleum (q. v). It is a white transparent crystalline substance, much used in the manufacture of candles.

Parchment, the prepared skin of the sheep or goat, is used for the writing of important legal documents.

Partridge Wood, a valuable timber obtained from the (Andira inermis) and various kinds of wood imported into Europe from South America and the West Indies. It is of a red color and streaked like the patridge and used by cabinet makers. It is also employed for making walking sticks, parasol handles and other fancy articles.

Patchouli, a substance of powerful odour used in perfumes. It is obtained from the dried branches of a species of Pogostemon, grown in East Indies, India and Ceylon.

Pear, the fruit of a rosaceous tree, supplies the beverage known as Perry.

Pemmican, either lean buffalo, venison, or beaf, compressed into smallest possible space, sometimes pressed into cakes, and used for preserved food for those taking part in Arctic expeditions. It contains much nutriment and will remain unimpaired for a long period of time.

Pennyroyal, an aromatic herb, (mentha pulegium). It is found in Europe and Western Asia and is used as mint flavoring. A medicinal oil is obtained from the

Peppers of several kinds met with in commerce are the following: Black pepper, the dried fruit of (Piper nigrum), cultivated in India, Siam and the East Indian Archipelago; white pepper, made by removing the dark outer coat of the black berries; Cayenne pepper, the product of several species of capsicum (q. v.); long pepper, the product of the perennial (Piper longum), a native of Malabar and Bengal.

Perfumes are derived from plants, animals and coal tars. From petals of the rose, Attar or Otto of Roses is obtained. This is very costly and is often adulterated with an Indian grass oil. It is exported from India, Persia and Turkey. Lavender Water is prepared by dissolving oil of

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lavender in alcohol. Musk is obtained from the musk-deer; Civet is supplied by the civet cat and Ambergris by the sperm whale.

Perry, a liquor resembling champagne and made from pears in the same manner cider is made from apples. Perry making is chiefly carried on in England.

Persian Berries, the berry of a Persian tree (Phannus cothurticus). They are used for a yellow dye.

Persian Powder, the powdered flower of a wild plant, the (Pyrethrum carneum), and (Pyrethrum roseum) grown in Persia and the Caucasus. The powder is used as an insect destroyer.

Persimmon, a tree grown from New York south and produces a fruit similar to a date plum. Its bark is used

medicinally as a febrifuge.

Petroleum is a product of some kind of natural distillation of organic remains, found mainly in the older sedimentary rocks—Silurian, Devonian and Carboniferous; but in many regions it is obtained from deposits of a much newer date. Sandstones and conglomerates are most highly charged; but shales, clays and limestones are also impregnated. The most extensive petroleum production in the world is in the United States and the Caspian region of Russia; and oil also occurs in Japan, New Zealand and Canada. In the United States the chief fields are in western Pennsylvania, New York, Ohio, West Virginia, Texas, Colorado and California.

Pewter, an alloy consisting of four parts tin, one part lead with a little copper and antimony.

Phenol, see carbolic acid.

Phormium, a species of hemp grown in New Zealand. The fibre is exported and in Scotland made into the coarser kinds of material for sacking, towelling, etc.

Phosphorus occurs combined with oxygen and calcium, and the bodies and bones of animals, in the seeds of plants and as the minerals phosphorite and apatite. Apatite, the calcium phosphate, is abundant in the older rocks of Canada; and rock phosphates are characteristic of many limestone deposits, where they are formed by the decay of animals. In some places the animal accumulations are true "bonebeds" and are used as fertilizers.

Physic Nut, a shrub called (Curcas purgaus) which yields a seed of medical value. It is produced in tropical America and the East Indies, the latter variety being used in China for the preparation of a varnish.

Piassava, the fibre obtained from the stalks of the leaves found in Brazil. It is used for the manufacture of brooms and brushes and an inferior kind of rope.

Picric Acid, an acid obtained by the action of nitric acid on equal parts of carbolic and concentrated sulphic acid and used as a yellow dye for silk, wool and leather.

Pimento, Allspice or Jamaica Pepper, consists of the unripe berries of (Eugenia pimento) Nat. Ord (Myrtaceae) a native of the West Indies, where it is cultivated, particularly in the hilly parts of Jamaica.

Pipeclay, a fine white plastic clay found in England and used in the manufacture of tobacco pipes and fine pottery.

Pistachio Nuts, a nut of greenish color resembling the almond, of the (Pistacia vera), a tree of southern Europe. The fruit is used for desserts and confectionery. The nut produces an oil used to flavor wines and cordials in Greece, where they are chiefly imported.

Pita, the fibre obtained from the (Bromelia), a plant grown in Central America and a species of the pineapple.

Pitch, a thick, black sticky substance obtained from boiling down tar. Also obtained from wood and valued by varnish and tarpaulin makers. Russia and France are the chief pitch producers.

Pitchblende, a dark mineral found in silver or lead ores, and largely composed of protoxide of uranium. It is chiefly used for painting on porcelain.

Plantain, the fruit of the (Musa paradisiaca) resembling a banana and edible when cooked. The tree grows in the East Indies and tropical America.

Plaster of Paris, a soft white powder which can be prepared artificially from sulphate of lime, used for taking

casts and as interior decoration in building purposes. Also used in the manufacture of cements and imitation marble.

Platinum, one of the noble metals, is found in flakes and nuggets in gold bearing gravels, most of it coming from the Ural Mountains. Its Sp. Gr., exceeding that of gold, is about 21.5; and it is employed in the manufacture of crucibles and for the wires of incandescent electric lamps.

Plumbago, see Graphite.

Podophyllin, an extract procured from the May apple, a tree of the United States and Canada. It has considerable medicinal value.

Pomegranate, the fruit of (Punica granatum). Nat. Odr. (Myrtaceae), a native of Northern Africa, Syria and Persia, naturalized in Southern Europe, the West Indies and Southern United States, yields a pleasant fruit, a valuable medicine, and a tanning substance used in the preparation of bookbinders' morocco leather.

Poplin is a fabric having a warp of silk and weft of worsted, the latter being the thicker, imparting a corded appearance. Irish Poplin manufactured at Dublin is celebrated.

Porpoise, the dolphin, a species of the whale. Oil is obtained from the blubber, and the skin makes strong and valuable leather.

Potash is the name applied to several compounds of potassium, but especially to the carbonate.

Potassium Compounds are derived from the felspar of granites, or by burning inland growing plants which extract it from the soil and so obtaining in their ashes Potassium Carbonate or Pearl Ash, a substance produced in America and Russia. Potassium Chloride occurs with rocksalt at Strassfurt, in Anhalt, Germany. Potassium Nitrate occurs on the soil in Rajputana, India.

Prunelloes, a small yellow plum grown in France and Austria

Prussian Blue, a compound of prussiate of potash and sulphate of iron, is a very useful pigment.

Prussic Acid, the name for the intensely poisonous hydrocyanic acid. In its medical use great care is required, and it is usually in the form of a weak solution in water.

Pulu, a silky dark substance obtained from the (Cibotium glaucum), a tree fern in the Sandwich Islands. It is used as a styptic and also for stuffing pillows and furniture.

Purpurine, an orange or red crystalline compound, one of the chief coloring matters obtained from the madder root.

Purree, a yellow dye obtained from the urine of cattle fed on mango leaves, and principally used in India.

Putchuk, the root of (Aucklandia Costus), a plant found in Cashmere. It has an odor resembling orris root and is used as incense both in India and China.

Pyroligneous Acid, an acid obtained by destructive distillation of wood. When purified, it may be used as a substitute for vinegar and also used in the manufacture of varnishes, and an ingredient in cheap perfumes. It is also called wood naphtha on account of the naphtha smell.

Pyroxylin, see Gun Cotton.

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Quartz, a mineral composed of silica, and occurring in hexagonal crystals, either colorless and transparent, yellow, brown, green, purple and other colors.

Quassia, a bitter wood obtained from the Jamaica ash, a tree found in the West Indies, and used medicinally as a tonic and in case of dyspepsia.

Quebracho, a hard wood, (Aspidosperma quebracho) a tree of tropical America. Its bark is valuable both for its tannin and for its medical properties.

Quercitron, the inner bark of (Qercus tinctoria), Nat. Ord. (Cupuliferae), a native of Pennsylvania, the Carolinas, and Georgia, yields a yellow dye for calico printing.

Quicksilver, see Mercury.



Quinine, an alkaloid obtained from several species of the bark of the cinchona. One of the most popular substances is the sulphate of quinine, popularly called quinine and used in cases of malarial fever.

Rabannas, the matting made from the (Raphia rufea), a native plant of Madagascar.

Rachat-lukumia, a sweetmeat composed of sugar and

starch and popular in Turkey.

Racoon, an animal found only in the United States and Canada, and valuable for its skin, which is of grevish color.

Radium is an element which occurs in minute quantities in pitchblende and closely resembles barium in its properties. Its compounds are constantly giving off radiations into space and these are capable of discharging an electroscope, appearing on a photographic plate, and rendering screens of zinc blende and barium platino-cyanide luminous. This radio-activity is accompanied by

an increase in temperature of 2 C. of the radium salt.

Ramie or Rhea, the fibre of China Grass, Nat. Ord.

(Urticaceae), used in the East for cordage and in the

West for incandescent gas mantles.

Rape Oil is produced from the seeds of (Brassica napus), Nat. Ord. (Cruciferae), a plant which grows wild in many parts of England, France and Germany and which is cultivated in those countries for the sake of the oil, which is the best lubricant for machinery, especially locomotives.

Rappee, a pungent kind of snuff of course variety. made from the darker and ranker kind of tobacco leaves. Rattans, a very tough, long stem of a species of (Calamus), used in the making of walking sticks, chairs, hats, mats, baskets, etc. They are a native of the East

Realgar, an orange-red mineral of resinous luster, occurring in crystallic or in granular form, used in pyrotechny in making "white fire" and also used as a pigment.

Regulus is the name applied to an intermediate and

impure product in the smelting of metallic ores, especially

of copper.

Reindeer Moss, a grey branching lichen found in northern climes and forming a winter food for reindeer

and other cattle, also used for stuffing pillows.

Resins are the thick juices of plants insoluble in water but generally dissolved by alcohol, as rubber, oratcaoutchouc; guttapercha; rosin, lac, mastic and copal.

Rhatany Root, the powerfully astringent root of the (Krameria triandra), a Peruvian shrub. It is used as medicine and as coloring in port wine.

Rhea Fibre, a fibre procured from the (Boehmeria nivea), a plant of Eastern Asia. The fibre is soft, silky and strong and used for the manufacture of China grass cloth.

Rosemary, a fragrant shrub the (Rosmarinus officinalis) of Southern Europe and Asia Minor. It is cultivated for its oil, used as an ointment for the growth of the hair, as a perfume and employed medicinally for its fragrance in plasters, ointments and liniments.

Rosewood, a wood of value in cabinet and furniture making a dark red color, obtained from various South American trees, the best quality coming from Brazil.

Rottenstone, a siliceous soft stone found in England. It is brown, and when scraped into powder is used for polishing and cleaning metals and glass.

Rouge, a dark red powder, consisting of ferric oxide, and used for polishing metal. The cosmetic called rouge, is obtained from the safflower,

Rubber formerly known as Caoutchouc and India-rubber, is produced by a number of different trees and climbing plants. Thus the latex of a species of (Siphonia elastica) Nat. Ord. (Euphorbiaceae) of Brazil yields the best Para Rubber. It flows from wounds in the bark and is allowed to dry over moulds of clay. Central American Rubber is the product of (Castilloa elastica). That from Singapore, Assam, and other parts of the East Indies is the milky juice of (Ficus elastica). On the west coast of Africa a climbing plant (Landolphia), is the source

of the supply. African rubber is of the finest quality and the supply is practically unlimited. Plants of the true rubber tree of Para were raised from seed at Kew and exported to Assam, Burma and other provinces of British India. Smaller consignments were forwarded to the west coast of Africa, to Dominica, Jamaica, Queensland, Singapore and Trinidad; but in spite of all these efforts Para rubber is still the principal kind in the market. Borneo rubber is the product of at least five species of plants belonging to the Nat. Ord. (Apocynaceae), and Fiji rubber is the juice of an allied plant. Liberian rubber, like the native East Indian kind, is yielded by a species of fig.

Ruby, an oxide of aluminum, is a variety of the mineral corundum. The finest true rubies are exported from Burma and Siam.

Rue, a plant, (Ruta graveolens), a native of Europe, but cultivated in many parts of the world, the leaves of which yield a powerfully smelling oil of acrid taste, used medicinally.

Sable, one of the most valued of fur-bearing animals resembling a marten or weasel. The skin is brown with greyish spots scattered on the head and tawny on the throat and under parts.

Saccharin is a term which includes a number of crystalline sugar-like substances, derived from the true sugars by the elimination of water; or manufactured synthetically by chemists from the equivalents of water and carbon. The sweetening properties of saccharin being many times greater than those of the natural sugar.

Safflower, an herb obtained from India, Persia, and other parts of the East. It is used as red dye for coloring silk and cotton, and toilet rouge.

Saffron consists of the dried stigmas of the purple crocus formerly esteemed as a drug; now used to color medicines and confections.

Sago, a substance of nutritive power obtained from the sago palm and other species of palms, used as an article of diet, and for stiffening textiles. It is obtained exclusively from the East Indies.

Sal, the hard, dark brown course-grained timber of the (Shoren robusta) a tree of Northern India. It is used for making railway sleepers, bridges, etc.

Sal Prunellae, a substance of nitrate of potash, used for chemical purposes and the preparation of gun-

powder.

Salt Cake is crude Sodium Sulphate, occurring as a byproduct in the manufacture of hydrochloric acid. Salt of Lemon, or Sorrel, is acid potassium oxalate used as a solvent for ink-stains and in bleaching. Salt of Soda is sodium carbonate, or ordinary washing soda. Salt of Tartar is the commercial name for purified potassium carbonate. Salt of Vitriol is sulphate of zinc. Salt of Wormwood is carbonate of potash. Epsom Salt is magnesium sulphate. Glauber's Salt, or horse salt, the commercial name for sodium sulphate, is used in dyeing woolens. Rochelle Salt is sodium potassium tartrate. Spirit of Salt is the old name for muriatic or hydrochloric acid.

Saltpetre or Nitre (q. v.).
Sal Volatile, a strongly caustic liquid, of carbonate of ammonium mixed with ammonia and dilute alcohol, with either oil of nutmeg or oil of lemon added. It is the smelling salts of commerce.

Salicylic Acid, an acid obtained by heating sodium phenate in a current of carbonic acid gas. It is a valuable

antiseptic and taken internally for medicine.

Salsify, an edible root resembling carrots or parsnips grown throughout Asia and Europe. In America it is sometimes called the oyster plant on account of the presence of the flavor of oysters.

Sandalwood, the timber of a tree, (Santalum album), Nat. Ord. (Santalaceae), a native of India and China, is used for ornamental purposes, and in perfumery.

Sandarach, a resin obtained from a certain tree of Africa, chiefly Morocco. It is yellow and resembles mas-tic and used for the preparation of French polish. The timber of the tree is valuable in cabinet and furniture making.



Sappan Wood, the wood of the (Caesalpinia Sappan) a tree of India and Bengal, from which a red dye is

Sapphire, a valued gem of bluish color, the finest of which is found in India. The sapphire is nearly as hard as diamond, but unlike the diamond or the ruby,

it is valued for its quality and not the size.

Sapucaia Nuts, the nut of the (Lecythis zabucajo), a tree of northern Brazil. The nut is found in urnshaped pods, and packed much in the same fashion as Brazil nuts. A valuable oil is extracted from them.

Sardonyx is a variety of quartz, with red, white and black variegated bands.

Sarsaparilla, the starch procured from the fleshy roots of (Smilax officinalis), a woody climbing plant growing in Brazil, Honduras, Mexico and Jamacia, is said to be useful as a medicine; but this is disputed.

Sassafras, a species of laurel of great medicinal value, found in the United States and Canada. Oil of sassafras is extracted from the root and used for skin diseases and rheumatism. A dye is also extracted from the wood

Satinwood, a beautiful ornamental wood from the East and West Indies, having a smooth satiny texture.

Savin, an oil of the fruit of (Juniperus Sabina), a tree found in Italy and parts of the United States. It is of medicinal value.

Scammony, a gum resin obtained from the root of the (Convolvulus Scammonia), a plant found in Asia Minor. It is used medicinally, principally as a purgative for young children.

Seal, a mammal of the Pinnipedia group, found in the Arctic and northern regions. They are valuable for

their furs and the oil obtained from them.

Sealing Wax is manufactured from Lac (q. v.) bleached for white; colored with vermillion, ivory black, or other substances.

Seltzer, a mineral water obtained from the springs at Nieder-Selters, in Nassau. It is a mild stimulant and used principally as table water. It contains bicarbonate of soda, common salt and carbonic acid gas, and a number of other substances.

Semolina, hard wheat, coarsely ground, exclusively produced in Italy, and highly nutritious. It is used prin-

cipally for making puddings and soups.

Senega Root, the root of the (Polygala Senega), an herb popularly known as snake root in America. It is used medicinally for cases of bronchitis and lung trouble.

seed medicinally for cases of bronchitis and lung trouble.

Senna consists of the dried leaves of two species of (Cassia). Nat. Ord. (Leguminosae), used in medicine. That produced in Cairo and Alexandria is the produce of (C. angustifolia). The Indian product, originally an Arabian species, is known as Tinnevelly Senna.

Sepia, the well known deep brown-black pigment, is obtained from the "ink-bag" of the common cuttlefish.

Sequoia, a Latinized form of name of the Cherokee chief "Sequoiah," is applied to the Wellingtonia pine of California.

Sesame, an annual much cultivated from the shores of the Mediterranean to Japan and China, for the oil yielded by its seeds. The oil is known in commerce as "Gingili."

Shabrack, a cloth or sheep-skin covering for saddles. Shaddock, a pear-shaped fruit of the citron order, and resembling a grapefruit in flavor. The rind is thin and bitter. The fruit is refreshing and cooling.

Shagreen, an untanned kind of leather made from the skins of horses and asses, and prepared by pressing seeds into the leather before drying, giving it a granular appearance. It is usually dyed green.

Shale, a rock composed of the consolidation of mud, clay or silica and colored by ovide of iron, obtained in England and Scotland and valuable in the production of paraffin. Alum is also produced from certain shales,

Shantung is a silk fabric made in China on hand-

Shea Butter is the product of the nuts of a West African tree. Nat. Ord. (Sapotaceae), as valuable as palm oil and used for similar purposes.

Shellac, see Lac.

Shoddy, an inferior material produced from the waste ragged and worn woolen goods from factories. Although it is not as durable as new wool, it is serviceable while it lasts, and the trade has grown to an enormous proportion, especially in England, owing to the demand for woolen goods.

Shola, the pith of the (Aeschynomene aspera), an Indian plant, used for helmets worn by the British in

India, and for fans, toys, etc.

Silkworm Gut, a strong material formed from the silky secretion of the caterpillar. The worms, when about to spin their cocoons are immersed in vinegar, pulled asunder, and a long glutinous thread obtained from the silky secretions, which are stretched on a board and dried in the sun. This gut is prepared in Spain, Italy and China, and used for dressing the hook-ends of fishing lines

Simaruba, a small fruit-bearing tree, the (Simaruba amara), found in the tropics of Asia, Africa and America. The bitter root bark is used medicinally as a tonic and in cases of dysentery.

Sisal Hemp, the fibre of the American agave or maguey, is grown in Mexico and the Bahamas, and has become naturalized in the countries bordering upon the

Mediterranean. See Henequen.

Sissoo Wood, a dark brown compact, and durable timber obtained from the (Dalbergia Sissoo), a tree of the East Indies. The wood is used in shipbuilding, gun carriages, railway ties, and very valuable in the making of furniture.

Size, a glue composed of linseed oil, red lead, vermillion and mixed with turpentine, and used by papermakers.

gilders, house-painters, etc.

Skunk, a small animal of the weasel family found in the United States. Its skin is valuable used as an

imitation for Alaskan sable.

Slag, the waste or dross of smelting works, and foundries, which is utilized for a number of purposes. It is a bad conductor of heat and sound, and is used for covering boilers and filling up space between adjoining rooms. It is also cast into blocks and used for building and paving purposes.

Smalt, an oxide of cobalt melted with siliceous earth and potash, forms a kind of glass of a beautiful deep blue color, which when very finely ground is known as "powder blue." As its color is not changed by heat it is in great As its color is not changed by heat it is in great

demand for coloring earthenware.

Soapwort, the root of a silenaceous plant the (Saponaria officinalis), found in Asia Minor and various parts of Europe. It produces a gum and a resin, and the leaves of the plant contain a lather in water like that of soap, and is useful in washing silk and wool. It is also used medicinally as an aperient.

Sorghum, see Millet.
Soya Bean Oil, is an expressed oil derived from the Soya Bean (Glycine hispida) which is grown in Japan and China (Manchuria). It is used in the manufacture of soaps, and as a substitute for cotton seed oil.

Speculum Metal, an alloy capable of a high polish, made from copper, two parts to one part of tin, and used

for speculum, a reflector.

Spence's Metal, a composition of sulphide of iron and sulphur. It is used in making busts, medallions, etc.,

and used in joining pipes.

Spermaceti, a product obtained from the brain of the sperm whale, inhabiting the Southern Ocean. Before being exposed to the air spermaceti is an oily substance, which afterwards hardens and is used as a basis for ointments

Sperm Oil of obtained from the blubber of the sperm whale.

Spices include all the vegetable products which are fragrant and pungent, such as cinnamon, cloves, ginger, mace, nutmegs and pimento (all spice), which see.

Spiegeleisen, an iron chiefly consisting of carbon and manganese, used principally in the manufacture of bessemer steel.

Spikenard, a fragrant ointment or perfume obtained from the (Nardostachys Jatamansi), a plant found in India. It is also used medicinally.



Squills, a bulbous plant (Liliaceae) of many species, found in Southern Europe. One variety, the (Scilla maritima) is used medicinally.

Stearine, one of the fats occurring in both animals and plants, is the chief constituent of the more solid fats,

such as mutton suet.

Steatite, or Soapstone, a compact or massive variety of tale, anhydrous silicate of magnesia, white or yellow in color and greasy to the touch, is used by tailors to mark cloth and is known as "French Chalk." The large slabs of this substance are used for hearths, and stove linings; small pieces for slate pencils. It is also employed largely to mix with rubber; to adulterate paint; and in the manufacture of paper.

Storax, a resin obtained from the (Styrax officinalis) at one time used as incense, medicines, and in perfumes,

but no longer occurs in commerce,
Strontium, a metallic element of the calcium group occurring as a constituent in the minerals celestine and stronianite, Nitrate of strontia, a compound of strontium, is used in the manufacture of fire works, burning with a red flame.

Strophanthus Seeds, seeds of the (Strophanthus hispidus), a species of plant found in the tropical parts of Asia and Africa. The drug derived from the seeds is of exceedingly poisonous nature, and care must be taken

exceedingly poisonous nature, and care must be taken in its administration as a medicine.

Strychnine and Brucine, the two most poisonous alkaloids known, are found in the seeds of (Strychnos nux vomica) and (S. Ignatia) or St. Ignatius bean, Nat. Ord. (Loganiaceae), trees very common on the Coromandel Coast of India. Strychnine is used for rat poison and also for medicine.

Sturgeon, a fish of the Acipenseridae family. body is covered with a tough skin and protected by five rows of bony plates. Isinglass and caviare are products

of importance obtained from the sturgeon.

Suint, a greasy substance obtained from sheep's wool. known as lanoline, or wool fat. It is used as a source of potash, in soap making.

Sulphonal, a white and complex compound prepared

by oxidation of mercaptol. It is used medicinally, as

an efficacious hypnotic.

Sulphur, a yellow, brittle, solid substance obtained in certain volcanic districts, chiefly in Sicily and Iceland, where the element is found in beds of blue clay. The first vapors are condensed and form a powder called flowers of sulphur. The remainder is condensed as a liquid which is cast into sticks, forming roll sulphur or brimstone, of commerce. It is principally used in the manufacture of gunpowder, sulphuric acid, lucifer matches, volcanite, etc.

Sulphuric Acid, or Oil of Vitriol, is prepared for commercial purposes by roasting iron-pyrites in a furnace, and passing the gas into lead chambers with nitric acid, when the latter is decomposed and the sulphur dioxide is converted into sulphuric acid by taking up water and oxygen. It is the most important acid known, a brownish, heavy, oily substance, and is used as a means by which numerous other acids are prepared. It is also used in various arts and manufactures, of soda and bleeching powder, and as a dye. It is also used in medicines and is commercially known as oil of vitriol.

Sumach of commerce consists of the ground leaves and crushed buds of (Rhus coriaria), Nat. Ord. (Anacordiaceae), used for tanning and dyeing cotton fabric

yellow.

Sunn Hemp, a fibre obtained from the (Crotolaria), found in tropical Asia and Australia. The fibre is also called Indian hemp and used for making rope, sack cloth and other materials.

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Tacamahac, the fragrant product of several of tropical American balsameaceous trees. A resinous substance of very bitter taste, but pleasing odor, and used as an incense as well as medicinally.

Talc, see Mica. Tamarinds, the fruit of a large tree (Tamarindus indica), Nat. Ord. (Leguminosae), are imported from the East and West Indies.

Tampico Fibre, a kind of jalap or fibre obtained from a Mexican plant the (Yucca baccata), and used for the manufacture of cordage, rugs and various other fabrics. It is chiefly exported from Tampico, Mexico.

Tapioca, a starch obtained from the root of the (Manihot), in its commercial form appears as small lumps, crisp and transparent. It is highly nutritious, and therefore forms an excellent food for invalids and infants. It is chiefly exported from Brazil and Singapore, and extensively cultivated in South Africa.

Tartaric Acid which occurs in the juices of many fruits, is deposited as a salt during the fermentation of wine as (tartar) or (argol), from which the acid of commerce is prepared. It has a sour taste, and appears in the form of white transparent crystals. It is used in photography, medicine and in dyeing calico. It is also used in the manufacture of effervescing drinks.

Teak, Nat. Ord. (Verbenaceae), an Indian forest tree, supplies a highly prized timber used in shipbuilding, for railway carriage making and for many other objects where durability is required. African Teak, Nat. Ord. (Eurphorbiaceae), is also a valuable timber tree.

Teasel, Nat Ord. (Dipsaceae), so valuable for its large conical flowerheads, furnished with hard, stiff bracts

armed with sharp hooked awns, which are fitted into frames and used to raise the "nap" on woolen fabrics.

Terra-cotta, a hard baked pottery of brownish or reddish color, used for decorative purposes, and statuary, and when made well, is close and smooth in texture and retains a bright color. It has lately become very popular and is extensively manufactured.

Terra-Japonica, pale Catechu (q. v.) or Gambier.
Tincal, or Sodium Borate, occurs in Tibet and California, in dry lake beds. See Borax.

Tolu, see Balsam.
Tonca or Tonquin Bean, the seed of a fabaceous tree
the (Dipterix odorata) found in the northern part of South America. It is used in perfumes and often carried in snuff boxes to give a pleasing smell to the snuff.

Topaz, a gem stone, a silicate of alumina and fluorine, is one of the hardest of minerals.

Tortoiseshell of commerce is supplied by the horny shell of the Hawksbill Turtle, and that of the carett or giant tortoise, both of which live in all tropical seas. Thousands of these animals are annually caught off the Island of Ascension. The best tortoiseshell, however, comes from the East Indian Archipelago and is exported from Singapore. It is also brought from the West Indies and Galapagos Islands; from Mauritius, the Cape Verde and Canary Islands.

Tow, Course or broken waste fibre of hemp or flax, and used in the manufacture of paper, sheeting, bags

and yarn.

Trepang, see Beche de Mer.

Tripoli, a polishing powder, is composed of the frustules of (diatomaceae) and so called from the place of origin.

Truffles, a variety of fungi of the genus (Tuber). It is oblong shaped, with a warty, black surface. It is esteemed as a delicacy, and chiefly used as flavoring for culinary purposes. It is found in France, and grows underground. For this reason certain dogs and sometimes pigs are employed in obtaining them, the discovery being made by means of smell.

Tulip Tree, a tall magnoliaceous timber tree of the temperate parts of North America, with strong, durable, light timber, and light yellow in color. It is used in cabinet making, and in making woodenware, etc.

Tungsten, a heavy, white, brittle metal combined with tinstone, and found in Germany. It is also called wolfram, and its chief uses are in tungsten steel and in the tungsten lamp. One of its compounds, tungstate of soda, is used for stiffening light fabrics.

Turkey Red is a fine durable red dye, originally obtained from madder, but now prepared chemically.

Turmeric, the roots of the (Curcuma longa) a plant of India and Asia, and other tropical countries, from which a yellow dye is obtained. It is also used as an ingredient of various condiments, and used to adulterate mustard.

Turpentine, an oily fluid obtained from various species of pines, produced chiefly in the state of North Carolina. The oil of turpentine or common turpentine of commerce is used in the preparation of oils, paints and varnishes. It is also used medicinally as an applicant in cases of rheumatism, and as an antiseptic.

Turquoise, a hydrous phosphate of aluminum of blue or bluish green color, much used in jewelry. The best speciments are found in Persia.

Tusser or Tussore Silk, is a fabric produced in India from cocoons of wild caterpillars.

Ultramarine, the most beautiful and durable skyblue pigment originally made of lapis lazuli, now prepared artificially, was so called from Asia, its place of origin "beyond the sea."

Umber, a mineral found in Italy, Cyprus and sometimes found in England, of a brown color, and used, after being ground into powder, in the preparation of oil and water colors, and in house painters colors.

Upas, the juice of the Antjar or Anchar tree of the Philippine Islands, is a powerful vegetable poison.

Uranium is a rare white metal, whose compounds are used for staining glass.

Valerian, a shrub of various species. The root is valuable medicinally and used in cases of hysteria, on account of its stimulating properties.

Valonia consists of the very large acron cups of a dwarf shrubby oak (Quercua aegilops), imported from the Levant through Smyrna for use in tanning.

Vanadium, a rare metal of the nitrogen-phosphorus group, found either in iron ores or clays. Some of its salts are used to make aniline black, and for coloring porcelain.

Vanilla is the fruit of an epiphytic orchid, (Vanilla aromatica), growing in the hot, moist, shady forests of Brazil, Peru and the banks of the Orinoco used by confectioners for flavoring ices and custards.

Vaseline, a yellow translucent product obtained from petroleum or paraffin. It possesses neither taste nor smell and never becomes rancid. It is used in making ointments and used as a lubricant. It is also used to preserve fine steel instruments from rust.

Vegetable Ivory, or Corozo Nut, is the fruit of (Phytelphas macrocarpa), a dwarf palm-like tree growing in tropical South America in the forests which lie among the upper reaches of the Amazon and its tributaries. The nuts are imported in large quantities for the use of turners. Coquilla Nuts are the fruit of (Attalea funifera), Nat. Ord. (Palmaceae), of Central and Southern America, used by ornamental turners for making knobs for drawers, parasol and umbrella handles, chess-men, rings, brooches and small toys. The same palm affords the Piassaba Fibre (q. v.) used for rope making in Brazil.

Vellum, a finer kind of parchment, is prepared from the skins of calves, kids and lambs.

Verdigris, powdered acetate of copper, forming a green or blue substance, used by painters and dyers.

Verditer, the hydrated oxide of copper, forming a blue or green pigment, and used chiefly in paper dying. The two varieties of verditer are known as Bremen blue and Bremen green.

Vermillion, see under Mercury.

Vetiver, the root of the (Andropogon squarrosus), an East Indian grass, very fragrant and fibrous, used for making baskets, fans, mats, etc. It also yields an important oil which is used in perfumery, and employed in driving away moths from clothing.

Vitriol, see Sulphuric Acid.

Vulcanite is manufactured by mixing rubber with sulphur, which converts the whole into a substance known as Ebonite, used for the manufacture of combs, and many other articles.

Walrus, a large mammal, the male sometimes weighing as much as a ton. The animal is much hunted in the northern arctic regions, and is important for the ivory obtained from the tusks, the oil obtained from its blubber, and the hide, which is made into valuable leather.

Wattle Bark, see Minosa Bark.

Whalebone, a horny substance, more like hair, obtained from the roof of the mouth of certain species of whale. It is strong, flexible, light, and compact, and used for the manufacture of strong brushes, stiffening in stays, fans, whips, and for several other purposes.

Woad, a European plant the (Isatis tinctoria) for-

merly cultivated for the blue dye obtained from it. It was formerly used in place of indigo for dying woolen goods.

Wolfram, see Tungsten.

Wood Pulp, a pulp obtained from the pine tree, and a valuable commercial article used for paper-making.

It is mainly exported from Norway and Sweden.

Wormwood, the (Artemisia absinthium), a plant cultivated in Europe on account of its tonic properties, and for the oil procured from the leaves.

Wurrus, a substance covering the fruit of the (Mallotus Philippensis), a tree of the East Indies. An orange brown dye is obtained from this substance used in dving silk.

Xylodine, an explosive similar to gun cotton, is prepared by the action of nitric acid on starch or woody

Xylonite is a kind of celluloid (q. v.).

Yak, the Tibet domestic ox, is covered with a thick coat of long, silky hair, that on the lower parts hanging down to the ground.

Yams, important articles of food in tropical countries are the large tubers of a few species belonging to the Nat. Ord. (Discoreaceae), especially plentiful in the islands of the Pacific Ocean.

Yew, a tree of the Nat. Ord. (Coniferae), produces timber said to be immune from the attacks of insects.

Zamia, a genus of palm-like trees or low shrubs of the Nat. Ord. (Cycadeae), allied to the Coniferae, are now restricted to the Cape of Good Hope, Australia and Eastern Asia, some species yielding an edible starchy pith.

Zanella, a mixed twilled fabric used for covering umbrellas.

Zebra Wood, the wood of the (Omphalobium lambastii), a tree of Brazil. It is light brown in color, and very scarce, and is principally used in the manufacture of furniture.

Zedoary, the aromatic root of the (Curcuma), found in the Orient. It has a bitter taste and is used in the same manner as ginger.

Zephyr Cloth, a thin finely spun woolen fabric used for women's gowns.

Zinc or Spelter does not occur native, but is extracted from one or more of its ores, most largely Sphalerite or Sinzblende, the sulphide which is often associated with galena, the sulphide of lead, the two being so generally found together that the mineral is frequently spoken of as leadzincore. The mineral Calamine is the Carbonate. The metal is used in the manufacture of Carbonate. The metal is used in the manufacture of Zinc White, the oxide, a substitute for white lead. Alloyed with copper, zinc makes Brass, White Metal and Dutch Metal used in gilding. Galvanizing is the process of coating iron plate with zinc. Zinc ores are largely worked in Belgium, Silesia, the Rhine Provinces, Hungary. Twenty-five per cent of the world's supply is furnished by the United States.

Zylonite, same as Xylonite (q. v.).



# Canadian and American Railroads

From the inception of our trade with Oriental countries through the Pacific ports, the railways of the United States and Canada have rendered invaluable service in building up this traffic.

In the early days, the railway, serving the territory west of Chicago and New Orleans protected abnormally low rates on steel articles, on flour from the mills in Minnesota and North Dakota, and other articles for which there was a considerable demand in the Orient, with a view to establishing a permanent trans-Pacific service, and incidentally to get railway equipment to the West Coast for loading forest products eastward.

For many years a rate barely equal to the cost of transportation was maintained on flour from the Portland mills to Tacoma, to assist in building up our flour trade. On other traffic moving eastward from the Orient, as well as westward from the United States to this Coast, the railways west of Winnipeg, Chicago and New Orleans, until August, 1908, accepted a percentage proportion of through rates made necessary by the competition of the Suez lines.

In August, 1908, the railroads were required by the Interstate Commerce Commission to publish the inland proportions applying on Oriental traffic, and this order by the Interstate Commerce Commission was accompanied by a suggestion that the rates for domestic traffic might be measured by rates established for Oriental traffic, which suggestion resulted in a sharp increase in the rail rates and the diversion of a considerable portion of this traffic to the all-water routes, but when it became apparent that some of this highly desirable traffic would be lost to the transcontinental lines, rate readjustments were made, and there was no serious interruption to the movement across the Pacific.

The railway companies provide passenger service for silk, linens and other articles of high value, when required, and for ordinary freight in full trainloads, right of way over domestic products is given.

On December 31, 1917, possession and control of the railroads of the United States was taken over by the Government, and W. G. McAdoo appointed Director General of Railroads, which are now being operated under the following orders:

- 1. All officers, agents and employees of such transportation systems may continue in the performance of their present regular duties, reporting to the same officers as heretofore and on the same terms of employment.
- 2. Any officer, agent or employee desiring to retire from his employment shall give the usual and seasonable notice to the proper officer to the end that there may be no interruption or impairment of the transportation service required for the successful conduct of the war and the needs of general commerce.
- 3. All transportation systems covered by said proclamation and order shall be operated as a National system of transportation, the common and national needs being in all instances held paramount to any actual or supposed corporate advantage. All terminals, ports, locomotives, rolling stock and other transportation facilities are to be fully utilized to carry out this purpose without regard to ownership.
- 4. The designation of routes by shippers is to be disregarded when speed and efficiency of transportation service may thus be promoted.
- 5. Traffic agreements between carriers must not be permitted to interfere with expeditious movements.
- 6. Through routes which have not heretofore been established because of short hauling or other causes, are to be established and used whenever expedition and efficiency of traffic will thereby be promoted; and if difficulty is experienced in such through routing, notice thereof shall by carriers or shippers or both be given at once to the Director by wire.

7. Existing schedules of rates and outstanding orders of the Interstate Commerce Commission are to be observed, but any such schedules of rates or orders as may hereafter be found to conflict with the purposes of said proclamation or with this order shall be brought immediately by wire to the attention of the Director.

It will be noted that all of the railroads of the United States will be operated as a National system of transportation by the present employees, but under the direction of the Director General of Railroads, for the unification of the service during the war.

### Railroads Connecting the Pacific

The Railways having direct connection with Pacific Coast Points are as follows:

Prince Rupert: Grand Trunk Pacific.

Vancouver: Canadian Pacific Railway, Great Northern Railway, Canadian Northern, Northern Pacific, Pacific Great Eastern

Victoria: Esquimalt & Nanaimo Railway (Canadian Pacific Railway), Victoria & Sidney Railway (Great Northern Railway)

Nanaimo: Esquimalt & Nanaimo Railway (Canadian Pacific Railway).

New Westminster: Canadian Pacific Railway, Great Northern Railway, Northern Pacific, Canadian Northern Railway.

Bellingham: Bellingham Northern Railway (Chicago, Milwaukee & St. Paul Railway), Great Northern Railway, Northern Pacific Railway.

Port Townsend: Port Townsend & Puget Sound Railway.

Everett: Chicago, Milwaukee & St. Paul Railway, Great Northern Railway, Northern Pacific Railway.

Seattle: Chicago, Milwaukee & St. Paul Railway, Columbia & Puget Sound Railway, Great Northern Railway, Northern Pacific System, Pacific Coast Railroad.

Tacoma: Chicago, Milwaukee & St. Paul Railway, (Tacoma & Eastern), Northern Pacific Railway, Great Northern Railway, Union Pacific System, Tacoma Eastern Railroad.

Grays Harbor: Northern Pacific Railway, Chicago, Milwaukee & St. Paul Railway, Union Pacific System.

Willapa Harbor: Northern Pacific Railway, Chicago, Milwaukee & St. Paul Railway.

Vancouver, Wash.: Great Northern Railway, Northern Pacific Railway, Union Pacific System, Spokane, Portland & Seattle Railway.

Portland: Great Northern Railway, Northern Pacific Railway, Oregon Electric Railway, Union Pacific System, Portland Railway, Light & Power Company, Spokane, Portland & Seattle Railway.

Astoria: Spokane, Portland & Seattle Railway. Eureka, Cal.: Northwestern Pacific Railroad.

San Francisco: Atchison, Topeka & Santa Fe Railway, Northwestern Pacific Railroad, Ocean Shore Railroad, Southern Pacific Railway, Western Pacific Railway.

Oakland: Atchison, Topeka & Santa Fe Railway, Southern Pacific Railway, Western Pacific Railway.

Los Angeles: Atchison, Topeka & Santa Fe Railway, Pacific Electric Railway Company, San Pedro, Los Angeles & Salt Lake Railway, Southern Pacific Railway.

San Pedro: Pacific Electric Railway Company, San Pedro, Los Angeles & Salt Lake Railway, Southern Pacific Railway.

San Diego: Atchison, Topeka & Santa Fe Railway, San Diego & Arizona Railway, San Diego Electric Railway, Los Angeles & San Diego Beach.

### Miles of Track Operated in U.S. -All Tracks \*

(Main track plus yard track and sidings.)

	United	States	Eastern	District
Year	Number	Per Cent	Number	Per Cen
1905	<b>306,797</b>	100	100,319	32.7
1906	317,083	100	103,334	32.6
1907	327,975	100	106,024	32.3
1908	333,646	100	106,684	32.0
1909	342,352	100	107,773	31.5
1910	351,767	100	109,138	31.0
1911	362,825	100	119,549	33.0
1912	371,238	100	121,463	32.7
1913	379,509	100	123,290	32.5
1914	387,208	100	125,555	32.4
1915	391,142	100	126,441	32.3
	Southern	District	Western	District
Year	Southern Number	District Per Cent	Western Number	District Per Cen
Year 1905				
1905 1906	Number 46,877 48,630	Per Cent 15.3 15.3	Number 159,601 165,119	Per Cen 52.0 42.1
1905	Number 46,877 48,630 50,532	Per Cent 15.3 15.3 15.4	Number 159,601 165,119 171,419	Per Cen 52.0 42.1 52.3
1905 1906 1907 1908	Number 46,877 48,630 50,532 52,477	Per Cent 15.3 15.3 15.4 15.7	Number 159,601 165,119 171,419 174,485	Per Cen 52.0 42.1 52.3 52.3
1905 1906 1907 1908	Number 46,877 48,630 50,532 52,477 54,182	Per Cent 15.3 15.3 15.4 15.7 15.8	Number 159,601 165,119 171,419 174,485 180,397	Per Cen 52.0 42.1 52.3 52.3 52.7
1905	Number 46,877 48,630 50,532 52,477 54,182 55,425	Per Cent 15.3 15.3 15.4 15.7 15.8 15.8	Number 159,601 165,119 171,419 174,485 180,397 187,204	Per Cen 52.0 42.1 52.3 52.3 52.7 53.2
1905	Number 46,877 48,630 50,532 52,477 54,182 55,425 63,658	Per Cent 15.3 15.3 15.4 15.7 15.8 15.8 17.5	Number 159,601 165,119 171,419 174,485 180,397 187,204 179,618	Per Cen 52.0 42.1 52.3 52.3 52.7 53.2 49.5
1905	Number 46,877 48,630 50,532 52,477 54,182 55,425 63,658 65,593	Per Cent 15.3 15.3 15.4 15.7 15.8 15.8 17.5 17.7	Number 159,601 165,119 171,419 174,485 180,397 187,204 179,618 184,182	Per Cen 52.0 42.1 52.3 52.7 53.2 49.5 49.6
1905	Number 46,877 48,630 50,532 52,477 54,182 55,425 63,658 65,593 67,639	Per Cent 15.3 15.4 15.7 15.8 15.8 17.5 17.7	Number 159,601 165,119 171,419 174,485 180,397 187,204 179,618 184,182 188,850	Per Cen 52.0 42.1 52.3 52.3 52.7 53.2 49.5 49.6 49.8
1905	Number 46,877 48,630 50,532 52,477 54,182 55,425 63,658 65,593	Per Cent 15.3 15.3 15.4 15.7 15.8 15.8 17.5 17.7	Number 159,601 165,119 171,419 174,485 180,397 187,204 179,618 184,182	Per Cen 52.0 42.1 52.3 52.7 53.2 49.5 49.6

\*Includes a small amount of mileage in Canada; also includes duplications on account of trackage rights and other jointly operated mileage; excludes switching and terminal company mileage, years 1908 to 1915. Mileage of switching and terminal companies in 1915 amounted to 1,937 miles of main track and 3,416 miles of yard track and sidings, etc.

### **DUTY TO STAY BY AFTER COLLISION** An Act in Regard to Collision at Sea

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that in every collision between two vessels it shall be the duty of the master or person in charge of each vessel, if and so far as he can do so without serious danger to his own vessel, crew and passengers (if any) to stay by other vessel until he has ascertained that she has no need of further assistance, and to render to the other vessel, her master, crew and passengers (if any) such assistance as may be necessary in order to save them from any danger caused by the collision, and also to give the master or person in charge of the other vessel the name of his own vessel and her port of registry, or the port or place to which she belongs, and also the name of the ports and places from which and to which she is bound. If he fails so to do, and no reasonable cause for such failure is shown, the collision shall, in the absence of proof to the contrary, be deemed to have been caused by his wrongful act, neglect, or default.
Sec. 2. That every master or person in charge of a

United States vessel who fails, without reasonable cause, to render such assistance or give such information as aforesaid shall be deemed guilty of a misdemeanor, and shall be liable to a penalty of one thousand dollars, or imprisonment for a term not exceeding two years; and for the above sum the vessel shall be liable and may be seized and proceeded against by process in any district court of the United States by any person; onehalf of such sum to be payable to the informer and the other half to the United States.

That this act shall take effect at a time to Sec. 3. be fixed by the President, by proclamation issued for the purpose.

Approved, September 4, 1890. To take effect on December 15, 1890.

### **COMMON NAUTICAL TERMS**

Aft (abaft): Toward the stern or end of vessel.

Forward: Toward the bow or front of vessel.

Starboard: Right hand side of ship looking forward.

Port: Left hand side of ship looking forward.
Larboard: Opposite of Starboard; an obsolete term
now superseded by "Port."
Weather-side: Side of ship toward the wind.
Lee-side: Side away from the wind.

Fore-and-aft: Lengthwise of the ship.

Thwartship: Crosswise of the ship.

Midship: Toward the middle or "waist" of a ship.

equidistant from the bow and stern.

Poop: Raised deck at the stern.

Fo'castle: "Forecastle," seamen's quarters in the

bow of ship. Gloryhole: Steward's quarters.

Galley: Passageway. Bulkhead: Partition. Scupper: Channel for water.

Rolling: Motion of a ship from side to side.

Pitching: Plunging of a ship's head in the sea, causing up-and-down movement.

Scending: A mixture of rolling and pitching.

Latitude: Distance directly north and south from the Equator.

Longitude: Distance directly east or west of the Meridian of Greenwich.

Altitude: Angular distance of the Pole above the horizon

Sextant: An instrument for measuring a required angle of the sun to obtain a ship's position.

Dead Reckoning: A method of finding a ship's approximate position from the course steered and distance

Equinox: Equal length of day and night occuring March 21 and September 21.

Nautical Mile or Knot: The sixtieth part of a degree; 800 feet more than an English land mile.

Statute Mile: 5.280 feet. Chart: A sea map.

Fathom: Six feet.

Soundings: Depth of water in fathoms, or feet, at low water of Spring tides.

Drift Current: Movement of surface of the sea.

Flood-tide: Rising tide. Ebb-tide: Falling tide.

Spring-tide: High tide caused by the sun and moon being on the meridian together, or in opposition.

Neap-tide: Low tide caused by the sun and moon being furthest apart.

Height of Tide: Difference between level of highwater and that of low-water.

Age of the Tide: Difference of time between the moon's transit and appearance of the tide.

Cable Address "Sevenseas"

Codes: Bentley's, Western Union

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# United States Postal Regulations

The minimum postal rate—one ounce for 3 cents—is in effect from the United States proper to Alaska, New Zealand, Canada, Cuba, Mexico, Republic of Panama, Canal Zone, Bahama Islands, Barbados Islands, British Guiana, British Honduras, Dutch West Indies, Leeward Islands, Newfoundland, England, Ireland, Scotland, Wales, Honolulu, Philippine Islands, Tutuila, Porto Rico, Island of Guam and Shanghai, China. Mail for Shanghai must have "U. S. Postal Agency" written on the envelope.

### Parcel Post

Fourth-class Matter Embraces that known as domestic parcel post mail, and includes merchandise, farm and factory products, seeds, cuttings, bulbs, roots, scions, and plants, books (including catalogs), miscellaneous printed matter weighing more than 4 pounds, and all other mailable matter not embraced in the first, second, and third classes.

Extent and Usefulness of Parcel Post: The domestic parcel post offers a convenient, quick, and efficient means of transporting mailable parcels to any post office in the United States or its possessions. The service reaches more places than any other transportation agency. It brings producers and consumers into closer contact, thus opening the way to reducing the high cost of living. Special treatment and advantages are accorded to shipments of farm products weighing up to 70 pounds Low postage rates, based on the service rendered, are provided. The rates to near-by zones are particularly advantageous. Parcels may be insured against loss and may be sent C. O. D., and as special-delivery matter.

### Rates of Postage on Fourth-Class or Parcel Post Matter, to be Fully Prepaid, Unsealed, are as follows:

- (a) Parcels weighing 4 ounces or less, except books, seeds, plants, etc., 1 cent for each ounce or fraction thereof, any distance.
- (b) Parcels weighing 8 ounces or less, containing books, seeds, cuttings, bulbs, roots, scions, and plants, 1 cent for each 2 ounces or fraction thereof, regardless of distance.
- (c) Parcels weighing more than 8 ounces, containing books, seeds, cuttings, plants, etc., parcels of miscellaneous printed matter weighing more than 4 pounds, and all other parcels of fourth-class matter weighing more than 4 ounces are chargeable, according to distance or zone, at the pound rates shown in the following table (except as provided in paragraph (d) below), a fraction of a pound being computed as a full pound:
- (d) Parcels subject to the pound rates, mailed for delivery within the first or second zone, are, when the distance by the shortest regular mail route from the office of origin to the office of delivery is 300 miles or more, chargeable with postage at the rate of 6 cents for the first pound and 2 cents for each additional pound, a fraction of a pound being computed as a full pound.

The following locations in Oregon and Washington require this rate when mailed in Seattle:

### Oregon

Arlington	Elsi <b>e</b>	Rock Creek
Arch Cape	Hamlet	Shutler
Blalock	Jewell	Wasco
De Moss Springs	Klondike	Willows
Early	McDonald	
Ecola	Necanicum	

### Washington

Leese	Oroville
Loomis	Roosevelt
Lucas	Sixprong
Molson	Success
Newbury	Sundale
Nighthawk	Wanicut
	Loomis Lucas Molson Newbury

Place of Mailing: Parcels of books, seeds, and plants, weighing more than 8 ounces, and parcels of other fourth-class matter weighing more than 4 ounces, must be mailed at a post office, branch post office named, numbered, or lettered station, or delivered to a rural or other carrier duly authorized to receive such matter. Smaller parcels may be deposited in letter or package boxes.

### Parcel Post Zones and Rates

Size not greater than 84 inches in length and girth combined.

Distances—1st zone, 50 miles. 2nd zone, 50 to 150 miles. 3rd zone, 150 to 300 miles. 4th zone, 300 to 600 miles. 5th zone, 600 to 1,000 miles. 6th zone, 1,000 to 1,400 miles. 7th zone, 1,400 to 1,800 miles. 8th zone, over 1,800 miles. ALASKA weight limit is 50 pounds and the rate is 12 cents per pound.

### POUNDS AND ZONES

	Local	1st	2nd	3rd
1 lb	\$0.05	\$0.05	\$0.05	\$0.06
2 lbs	.06	.06	.06	.08
3 lbs	.06	.07	.07	.10
4 lbs	.07	.08	.08	.12
5 lbs	.07	.09	.09	.14
6 lbs	.08	.10	.10	.16
7 lbs	.08	.11	.11	.18
8 lbs	.09	.12	.12	.20
9 lbs	.09	.13	.13	.22
10 lbs	.10	.14	.14	.24
11 lbs	.10	.15	.15	.26
12 lbs	.11	.16	.16	.28
13 lbs	.11	.17	.17	.30
14 lbs	.12	.18	.18	.32
15 lbs	.12	.19	.19	.34 .36
16 lbs	.13 .13	.20	.20 .21	.30
17 lbs	.13	.21	.21	.36
18 lbs	.14	.23	.22	.40
19 lbs	.15	.23	.23	.44
21 lbs		.25	.25	.46
22 lbs	.16	.26	.26	.48
23 lbs	.16	.27	.27	.50
24 lbs	.17	.28	.28	.52
25 lbs	.17	.29	.29	.54
26 lbs	.18	.30	.30	.56
27 lbs	.18	.31	.31	.58
28 lbs	.19	.32	.32	.60
29 lbs	.19	.33	.33	.62
30 lbs	.20	34	.34	.64
31 lbs	.20	.35	.35	.66
32 lbs	.21	.36	.36	.68
33 lbs	.21	.37	.37	.70
34 lbs	.22	.38	.38	.72
35 lbs	.22	.39	.39	.74
36 lbs	.23	.40	.40	.76
37 lbs	.23	.41	.41	.78
38 lbs	.24	.42	.42	.80
39 lbs	.24	.43	.43	.82
40 lbs		.44	.44	.84
41 lbs	.25	.45	.45	.86
42 lbs	.26	.46	.46	.88
43 lbs		.47	.47	.90
44 lbs	.27	.48	.48	.92

	Local	lst	2nd	3rd
45 lbs	.27	.49	.49	.94
46 lbs	28	.50	.50	.96
47 lbs	.28	.51	.51	.98
48 lbs	.29	.52	.52	1.00
49 lbs	.29	.53	.53	1.02
50 lbs	.30	.54	.54	1.04
51 lbs	.30	.55	.55	1.06
52 lbs	.31	.56	.56	1.08
53 lbs	.31	.57	.57	1.10
54 lbs	.32	.58	.58	1.12
55 lbs	.32	.59	.59	1.14
56 lbs	.33	.60	.60	1.16
57 lbs	.33	.61	.61	1.18
58 lbs	.34	.62	.62	1.20
59 lbs	.34	.63	.63	1.22
60 lbs	.35	.64	.64	1.24
61 lbs	.35	.65	.65	1.26
62 lbs	.36	.66	.66	1.28
63 lbs	.36	.67	.67	1.30
64 lbs	.37	.68	.68	1.32
65 lbs	.37	.69	.69	1.34
66 lbs	.38	.70	.70	1.36
67 lbs	.38	.71	.71	1.38
68 lbs	.39	.72	.72	1.40
59 lbs	.39	.73	.73	1.42
70 lbs	.40	.74	.74	1.44

1   1b	=======================================	441	5.1		P. 1	
2 lbs.		4th	5th	6th	7th	8th
3 lbs.       .15       .20       .25       .31       .36         4 lbs.       .19       .26       .33       .41       .48         5 lbs.       .23       .32       .41       .51       .60         6 lbs.       .27       .38       .49       .61       .72         7 lbs.       .31       .44       .57       .71       .84         8 lbs.       .35       .50       .65       .81       .96         9 lbs.       .39       .56       .73       .91       1.08         10 lbs.       .43       .62       .81       1.01       1.20         11 lbs.       .47       .68       .89       1.11       1.32         12 lbs.       .51       .74       .97       1.21       1.44         13 lbs.       .55       .80       1.05       1.31       1.56         14 lbs.       .59       .86       1.13       1.41       1.68         15 lbs.       .67       .98       1.29       1.61       1.92         17 lbs.       .71       1.04       1.37       1.71       2.04         18 lbs.       .75       1.10       1.45       1.	1 lb					
4 lbs.   .19   .26   .33   .41   .48   .51   .60   .61   .72   .71   .84   .51   .60   .72   .71   .84   .57   .71   .84   .81   .81   .35   .50   .65   .81   .96   .91   .10	2 lbs		1 .14	.17		
5 lbs         .23         .32         .41         .51         .60           6 lbs         .27         .38         .49         .61         .72           7 lbs         .31         .44         .57         .71         .84           8 lbs         .35         .50         .65         .81         .96           9 lbs         .39         .56         .73         .91         1.08           10 lbs         .47         .68         .89         1.11         1.20           11 lbs         .47         .68         .89         1.11         1.20           11 lbs         .51         .74         .97         1.21         1.44           13 lbs         .55         .80         1.05         1.31         1.56           14 lbs         .59         .86         1.13         1.41         1.68           15 lbs         .63         .92         1.21         1.51         1.80           16 lbs         .67         .98         1.29         1.61         1.92         1.71         1.80         1.71         1.04         1.37         1.71         2.04         1.81         1.61         1.92	3 IDS					
6 lbs   .27   .38   .49   .61   .72   .72   .71   .84   .57   .71   .84   .58   .50   .55   .81   .96   .91   .35   .50   .55   .81   .96   .91   .39   .56   .73   .91   .108   .10   .39   .56   .73   .91   .108   .10   .39   .55   .74   .97   .121   .144   .13   .55   .50   .55   .80   .105   .131   .156   .14   .55   .80   .105   .131   .156   .14   .55   .63   .92   .121   .151   .180   .15   .59   .86   .113   .141   .168   .15   .59   .86   .13   .141   .168   .15   .59   .86   .13   .171   .204   .17   .104   .137   .171   .204   .18   .55   .71   .104   .137   .171   .204   .18   .55   .75   .110   .145   .181   .216   .19   .15   .180   .21   .228   .20   .55   .83   .22   .161   .201   .240   .21   .252   .21   .252   .25	4 IDS					
7 lbs         .31         .44         .57         .71         .84           8 lbs         .35         .50         .65         .81         .96           9 lbs         .39         .56         .73         .91         1.08           10 lbs         .43         .62         .81         1.01         1.20           11 lbs         .47         .68         .89         1.11         1.32           12 lbs         .51         .74         .97         1.21         1.44           13 lbs         .55         .80         1.05         1.31         1.56           14 lbs         .59         .86         1.13         1.41         1.68           15 lbs         .63         .92         1.21         1.51         1.80           16 lbs         .67         .98         1.29         1.61         1.92           17 lbs         .71         1.04         1.37         1.71         2.04           18 lbs         .75         1.10         1.45         1.81         2.16           19 lbs         .79         1.16         1.53         1.91         2.28           20 lbs         .87 </td <td>3 IDS</td> <td>.23</td> <td></td> <td></td> <td></td> <td></td>	3 IDS	.23				
8 lbs       .35       .50       .65       .81       .96         9 lbs       .39       .56       .73       .91       1.08         10 lbs       .43       .62       .81       1.01       1.20         11 lbs       .47       .68       .89       1.11       1.32         12 lbs       .51       .74       .97       1.21       1.44         13 lbs       .55       .80       1.05       1.31       1.56         14 lbs       .59       .86       1.13       1.41       1.68         15 lbs       .63       .92       1.21       1.51       1.80         16 lbs       .67       .98       1.29       1.61       1.92         17 lbs       .71       1.04       1.37       1.71       2.04         18 lbs       .75       1.10       1.45       1.81       2.16         19 lbs       .79       1.16       1.53       1.91       2.28         20 lbs       .83       1.22       1.61       2.01       2.40         21 lbs       .91       1.34       1.77       2.21       2.64         23 lbs       .95 <td>0 IDS</td> <td></td> <td>.38</td> <td></td> <td></td> <td></td>	0 IDS		.38			
9 lbs   .39   .56   .73   .91   1.08   10 lbs   .43   .62   .81   1.01   1.20   11 lbs   .47   .68   .89   1.11   1.32   12 lbs   .51   .74   .97   1.21   1.44   13 lbs   .55   .80   1.05   1.31   1.56   14 lbs   .59   .86   1.13   1.41   1.68   15 lbs   .63   .92   1.21   1.51   1.80   16 lbs   .67   .98   1.29   1.61   1.92   17 lbs   .71   1.04   1.37   1.71   2.04   18 lbs   .75   1.10   1.45   1.81   2.16   19 lbs   .79   1.16   1.53   1.91   2.28   20 lbs   .83   1.22   1.61   2.01   2.40   21 lbs   .87   1.28   1.69   2.11   2.52   22 lbs   .91   1.34   1.77   2.21   2.64   23 lbs   .95   1.40   1.85   2.31   2.76   24 lbs   .99   1.46   1.93   2.41   2.88   2.5 lbs   1.03   1.52   2.01   2.51   3.00   2.6 lbs   1.07   1.58   2.09   2.61   3.12   27 lbs   1.11   1.64   2.17   2.71   3.24   28 lbs   1.15   1.70   2.25   2.81   3.36   29 lbs   1.19   1.76   2.33   2.91   3.48   30 lbs   1.23   1.82   2.49   3.11   3.72   32 lbs   1.31   1.94   2.57   3.21   3.84   33 lbs   1.35   2.00   2.65   3.31   3.96   34 lbs   1.39   2.06   2.73   3.41   4.08   35 lbs   1.43   2.12   2.81   3.51   4.20   3.15   2.24   2.97   3.71   4.44   38 lbs   1.55   2.30   3.05   3.81   4.56   39 lbs   1.59   2.36   3.13   3.91   4.68   40 lbs   1.59   2.36   3.13   3.91   4.68   40 lbs   1.67   2.48   3.29   4.11   4.92   42 lbs   1.77   2.66   3.53   4.41   5.28   44 lbs   1.79   2.66   3.53   4.41   5.28   4.56   4.51   5.40   4.51   5.40   4.51   5.40   4.51   5.40   4.	7 109	.31				
10 lbs         .43         .62         .81         1.01         1.20           11 lbs         .47         .68         .89         1.11         1.32           12 lbs         .51         .74         .97         1.21         1.44           13 lbs         .55         .80         1.05         1.31         1.56           14 lbs         .59         .86         1.13         1.41         1.68           15 lbs         .63         .92         1.21         1.51         1.80           16 lbs         .67         .98         1.29         1.61         1.92           17 lbs         .71         1.04         1.37         1.71         2.04           18 lbs         .75         1.10         1.45         1.81         2.16           19 lbs         .79         1.16         1.53         1.91         2.28           20 lbs         .83         1.22         1.61         2.01         2.40           21 lbs         .87         1.28         1.69         2.11         2.52           22 lbs         .91         1.34         1.77         2.21         2.64           23 lbs	0 lbs					
11 lbs       .47       .68       .89       1.11       1.32         12 lbs       .51       .74       .97       1.21       1.44         13 lbs       .55       .80       1.05       1.31       1.56         14 lbs       .59       .86       1.13       1.41       1.68         15 lbs       .63       .92       1.21       1.51       1.80         16 lbs       .67       .98       1.29       1.61       1.92         17 lbs       .71       1.04       1.37       1.71       2.04         18 lbs       .75       1.10       1.45       1.81       2.16         19 lbs       .79       1.16       1.53       1.91       2.28         20 lbs       .83       1.22       1.61       2.01       2.40         21 lbs       .87       1.28       1.69       2.11       2.52         22 lbs       .91       1.34       1.77       2.21       2.64         23 lbs       .95       1.40       1.85       2.31       2.76         24 lbs       .99       1.46       1.93       2.41       2.88         25 lbs	10 lbs					
12 lbs         .51         .74         .97         1.21         1.44           13 lbs         .55         .80         1.05         1.31         1.56           14 lbs         .59         .86         1.13         1.41         1.68           15 lbs         .63         .92         1.21         1.51         1.80           16 lbs         .67         .98         1.29         1.61         1.92           17 lbs         .71         1.04         1.37         1.71         2.04           18 lbs         .75         1.10         1.45         1.81         2.16           19 lbs         .79         1.16         1.53         1.91         2.28           20 lbs         .83         1.22         1.61         2.01         2.40           21 lbs         .91         1.34         1.77         2.21         2.64           23 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .99         1.46         1.93         2.41         2.88           25 lbs         1.03         1.52         2.01         2.51         3.00           26 lbs <td>10 lbs</td> <td></td> <td></td> <td></td> <td></td> <td></td>	10 lbs					
13 lbs         .55         .80         1.05         1.31         1.56           14 lbs         .59         .86         1.13         1.41         1.68           15 lbs         .63         .92         1.21         1.51         1.80           16 lbs         .67         .98         1.29         1.61         1.92           17 lbs         .71         1.04         1.37         1.71         2.04           18 lbs         .75         1.10         1.45         1.81         2.16           19 lbs         .83         1.22         1.61         2.01         2.40           21 lbs         .87         1.28         1.69         2.11         2.52           22 lbs         .91         1.34         1.77         2.21         2.64           23 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .99         1.46         1.93         2.41         2.88           25 lbs         1.03         1.52         2.01         2.51         3.00           26 lbs         1.07         1.58         2.09         2.61         3.12           27 lbs<	12 lbs					
14 lbs.         .59         .86         1.13         1.41         1.68           15 lbs.         .63         .92         1.21         1.51         1.80           16 lbs.         .67         .98         1.29         1.61         1.92           17 lbs.         .71         1.04         1.37         1.71         2.04           18 lbs.         .75         1.10         1.45         1.81         2.16           19 lbs.         .79         1.16         1.53         1.91         2.28           20 lbs.         .83         1.22         1.61         2.01         2.40           21 lbs.         .87         1.28         1.69         2.11         2.52           22 lbs.         .91         1.34         1.77         2.21         2.64           23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11	13 lbe					
15 lbs         .63         .92         1.21         1.51         1.80           16 lbs         .67         .98         1.29         1.61         1.92           17 lbs         .71         1.04         1.37         1.71         2.04           18 lbs         .75         1.10         1.45         1.81         2.16           19 lbs         .79         1.16         1.53         1.91         2.28           20 lbs         .83         1.22         1.61         2.01         2.40           21 lbs         .87         1.28         1.69         2.11         2.52           22 lbs         .91         1.34         1.77         2.21         2.64           23 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .103         1.52         2.01         2.51         3.00           26 lbs         1.07         1.58         2.09         2.61         3.12           27 lbs	14 lbs	.50				
16 lbs         .67         .98         1.29         1.61         1.92           17 lbs         .71         1.04         1.37         1.71         2.04           18 lbs         .75         1.10         1.45         1.81         2.16           19 lbs         .79         1.16         1.53         1.91         2.28           20 lbs         .83         1.22         1.61         2.01         2.40           21 lbs         .87         1.28         1.69         2.11         2.52           22 lbs         .91         1.34         1.77         2.21         2.64           23 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .99         1.46         1.93         2.41         2.88           25 lbs         1.03         1.52         2.01         2.51         3.00           26 lbs         1.07         1.58         2.09         2.61         3.12           27 lbs         1.11         1.64         2.17         2.71         3.24           28 lbs         1.15         1.70         2.25         2.81         3.36           29 lb	15 lbs					
17 lbs.         .71         1.04         1.37         1.71         2.04           18 lbs.         .75         1.10         1.45         1.81         2.16           19 lbs.         .79         1.16         1.53         1.91         2.28           20 lbs.         .83         1.22         1.61         2.01         2.40           21 lbs.         .87         1.28         1.69         2.11         2.52           22 lbs.         .91         1.34         1.77         2.21         2.64           23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23	16 lbs					
18 lbs.         .75         1.10         1.45         1.81         2.16           19 lbs.         .79         1.16         1.53         1.91         2.28           20 lbs.         .83         1.22         1.61         2.01         2.40           21 lbs.         .87         1.28         1.69         2.11         2.52           22 lbs.         .91         1.34         1.77         2.21         2.64           23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.2	17 lbs					
19 lbs.         .79         1.16         1.53         1.91         2.28           20 lbs.         .83         1.22         1.61         2.01         2.40           21 lbs.         .87         1.28         1.69         2.11         2.52           22 lbs.         .91         1.34         1.77         2.21         2.64           23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.	18 lbs.					
20 lbs         .83         1.22         1.61         2.01         2.40           21 lbs         .87         1.28         1.69         2.11         2.52           22 lbs         .91         1.34         1.77         2.21         2.64           23 lbs         .95         1.40         1.85         2.31         2.76           24 lbs         .99         1.46         1.93         2.41         2.88           25 lbs         1.03         1.52         2.01         2.51         3.00           26 lbs         1.07         1.58         2.09         2.61         3.12           27 lbs         1.11         1.64         2.17         2.71         3.24           28 lbs         1.15         1.70         2.25         2.81         3.36           29 lbs         1.19         1.76         2.33         2.91         3.48           30 lbs         1.23         1.82         2.41         3.01         3.60           31 lbs         1.27         1.88         2.49         3.11         3.72           32 lbs         1.31         1.94         2.57         3.21         3.84	19 lbs					
21 lbs.         .87         1.28         1.69         2.11         2.52           22 lbs.         .91         1.34         1.77         2.21         2.64           23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.	20. lbs					
22 lbs.         .91         1.34         1.77         2.21         2.64           23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.39         2.06         2.73         3.41         4.08           35 lbs. <td< td=""><td>21 lbs</td><td></td><td></td><td></td><td></td><td></td></td<>	21 lbs					
23 lbs.         .95         1.40         1.85         2.31         2.76           24 lbs.         .99         1.46         1.93         2.41         2.88           25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.43         2.12         2.81         3.51         4.20           35 lbs.         1.43         2.12         2.81         3.51         4.20           36 lbs. <t< td=""><td>22 lbs</td><td></td><td></td><td></td><td></td><td></td></t<>	22 lbs					
24 lbs         .99         1.46         1.93         2.41         2.88           25 lbs         1.03         1.52         2.01         2.51         3.00           26 lbs         1.07         1.58         2.09         2.61         3.12           27 lbs         1.11         1.64         2.17         2.71         3.24           28 lbs         1.15         1.70         2.25         2.81         3.36           29 lbs         1.19         1.76         2.33         2.91         3.48           30 lbs         1.23         1.82         2.41         3.01         3.60           31 lbs         1.27         1.88         2.49         3.11         3.72           32 lbs         1.31         1.94         2.57         3.21         3.84           33 lbs         1.35         2.00         2.65         3.31         3.96           34 lbs         1.39         2.06         2.73         3.41         4.08           35 lbs         1.43         2.12         2.81         3.51         4.20           36 lbs         1.47         2.18         2.89         3.61         4.32           37 lbs<	23 lbs					
25 lbs.         1.03         1.52         2.01         2.51         3.00           26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.39         2.06         2.73         3.41         4.08           35 lbs.         1.43         2.12         2.81         3.51         4.20           36 lbs.         1.47         2.18         2.89         3.61         4.32           37 lbs.         1.51         2.24         2.97         3.71         4.44           38 lbs.	24 lbs					
26 lbs.         1.07         1.58         2.09         2.61         3.12           27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.39         2.06         2.73         3.41         4.08           35 lbs.         1.43         2.12         2.81         3.51         4.20           36 lbs.         1.47         2.18         2.89         3.61         4.32           37 lbs.         1.51         2.24         2.97         3.71         4.44           38 lbs.         1.59         2.36         3.13         3.91         4.68           40 lbs.	25 lbs	1.03	1.52	2.01		
27 lbs.         1.11         1.64         2.17         2.71         3.24           28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.39         2.06         2.73         3.41         4.08           35 lbs.         1.43         2.12         2.81         3.51         4.20           36 lbs.         1.47         2.18         2.89         3.61         4.32           37 lbs.         1.51         2.24         2.97         3.71         4.44           38 lbs.         1.55         2.30         3.05         3.81         4.56           39 lbs.         1.59         2.36         3.13         3.91         4.68           40 lbs.	26 lbs	1.07	1.58	2.09		
28 lbs.         1.15         1.70         2.25         2.81         3.36           29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.39         2.06         2.73         3.41         4.08           35 lbs.         1.43         2.12         2.81         3.51         4.20           36 lbs.         1.47         2.18         2.89         3.61         4.32           37 lbs.         1.51         2.24         2.97         3.71         4.44           38 lbs.         1.55         2.30         3.05         3.81         4.56           39 lbs.         1.59         2.36         3.13         3.91         4.68           40 lbs.         1.63         2.42         3.21         4.01         4.80           41 lbs.	27 lbs	1.11	1.64		2.71	
29 lbs.         1.19         1.76         2.33         2.91         3.48           30 lbs.         1.23         1.82         2.41         3.01         3.60           31 lbs.         1.27         1.88         2.49         3.11         3.72           32 lbs.         1.31         1.94         2.57         3.21         3.84           33 lbs.         1.35         2.00         2.65         3.31         3.96           34 lbs.         1.39         2.06         2.73         3.41         4.08           35 lbs.         1.43         2.12         2.81         3.51         4.20           36 lbs.         1.47         2.18         2.89         3.61         4.32           37 lbs.         1.51         2.24         2.97         3.71         4.44           38 lbs.         1.55         2.30         3.05         3.81         4.56           39 lbs.         1.59         2.36         3.13         3.91         4.68           40 lbs.         1.63         2.42         3.21         4.01         4.80           41 lbs.         1.67         2.48         3.29         4.11         4.92           42 lbs.	28 lbs	1.15		2.25		
31 lbs         1.27         1.88         2.49         3.11         3.72           32 lbs         1.31         1.94         2.57         3.21         3.84           33 lbs         1.35         2.00         2.65         3.31         3.96           34 lbs         1.39         2.06         2.73         3.41         4.08           35 lbs         1.43         2.12         2.81         3.51         4.20           36 lbs         1.47         2.18         2.89         3.61         4.32           37 lbs         1.51         2.24         2.97         3.71         4.44           38 lbs         1.55         2.30         3.05         3.81         4.56           39 lbs         1.59         2.36         3.13         3.91         4.68           40 lbs         1.63         2.42         3.21         4.01         4.80           41 lbs         1.67         2.48         3.29         4.11         4.92           42 lbs         1.71         2.54         3.37         4.21         5.04           43 lbs         1.75         2.60         3.45         4.31         5.16	29 lbs		1.76	2.33	2.91	3.48
32 lbs     1.31     1.94     2.57     3.21     3.84       33 lbs     1.35     2.00     2.65     3.31     3.96       34 lbs     1.39     2.06     2.73     3.41     4.08       35 lbs     1.43     2.12     2.81     3.51     4.20       36 lbs     1.47     2.18     2.89     3.61     4.32       37 lbs     1.51     2.24     2.97     3.71     4.44       38 lbs     1.55     2.30     3.05     3.81     4.56       39 lbs     1.59     2.36     3.13     3.91     4.68       40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	30 lbs			2.41	3.01	3.60
33 lbs.     1.35     2.00     2.65     3.31     3.96       34 lbs.     1.39     2.06     2.73     3.41     4.08       35 lbs.     1.43     2.12     2.81     3.51     4.20       36 lbs.     1.47     2.18     2.89     3.61     4.32       37 lbs.     1.51     2.24     2.97     3.71     4.44       38 lbs.     1.55     2.30     3.05     3.81     4.56       39 lbs.     1.59     2.36     3.13     3.91     4.68       40 lbs.     1.63     2.42     3.21     4.01     4.80       41 lbs.     1.67     2.48     3.29     4.11     4.92       42 lbs.     1.71     2.54     3.37     4.21     5.04       43 lbs.     1.75     2.60     3.45     4.31     5.16       44 lbs.     1.79     2.66     3.53     4.41     5.28       45 lbs.     1.83     2.72     3.61     4.51     5.40	31 lbs					3.72
34 lbs.     1.39     2.06     2.73     3.41     4.08       35 lbs.     1.43     2.12     2.81     3.51     4.20       36 lbs.     1.47     2.18     2.89     3.61     4.32       37 lbs.     1.51     2.24     2.97     3.71     4.44       38 lbs.     1.55     2.30     3.05     3.81     4.56       39 lbs.     1.59     2.36     3.13     3.91     4.68       40 lbs.     1.63     2.42     3.21     4.01     4.80       41 lbs.     1.67     2.48     3.29     4.11     4.92       42 lbs.     1.71     2.54     3.37     4.21     5.04       43 lbs.     1.75     2.60     3.45     4.31     5.16       44 lbs.     1.79     2.66     3.53     4.41     5.28       45 lbs.     1.83     2.72     3.61     4.51     5.40	32 lbs					
35 lbs     1.43     2.12     2.81     3.51     4.20       36 lbs     1.47     2.18     2.89     3.61     4.32       37 lbs     1.51     2.24     2.97     3.71     4.44       38 lbs     1.55     2.30     3.05     3.81     4.56       39 lbs     1.59     2.36     3.13     3.91     4.68       40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	33 lbs					
36 lbs     1.47     2.18     2.89     3.61     4.32       37 lbs     1.51     2.24     2.97     3.71     4.44       38 lbs     1.55     2.30     3.05     3.81     4.56       39 lbs     1.59     2.36     3.13     3.91     4.68       40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	34 lbs					
37 lbs     1.51     2.24     2.97     3.71     4.44       38 lbs     1.55     2.30     3.05     3.81     4.56       39 lbs     1.59     2.36     3.13     3.91     4.68       40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	35 lbs					
38 lbs     1.55     2.30     3.05     3.81     4.56       39 lbs     1.59     2.36     3.13     3.91     4.68       40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	36 lbs					
39 lbs     1.59     2.36     3.13     3.91     4.68       40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	37 lbs					
40 lbs     1.63     2.42     3.21     4.01     4.80       41 lbs     1.67     2.48     3.29     4.11     4.92       42 lbs     1.71     2.54     3.37     4.21     5.04       43 lbs     1.75     2.60     3.45     4.31     5.16       44 lbs     1.79     2.66     3.53     4.41     5.28       45 lbs     1.83     2.72     3.61     4.51     5.40	38 lbs					
41 lbs	39 lbs					
42 lbs	40 IDS					
43 lbs 1.75   2.60   3.45   4.31   5.16   44 lbs 1.79   2.66   3.53   4.41   5.28   45 lbs 1.83   2.72   3.61   4.51   5.40	41 IDS					
44 lbs 1.79   2.66   3.53   4.41   5.28   45 lbs 1.83   2.72   3.61   4.51   5.40	42 IDS					
45 lbs 1.83   2.72   3.61   4.51   5.40	40 IDS					
46 lbs   1 97   2.72   3.01   4.51   5.40   46 lbs   1 97   2.78   3.60   4.61   5.52	45 lbs					
	46 1ba					5.40
47 lbs 1.91 2.84 3.77 4.71 5.64	40 108				4.61	
47 lbs 1.91   2.84   3.77   4.71   3.64   48 lbs   1.95   2.90   3.85   4.81   5.76						
49 lbs 1.99 2.96 3.93 4.91 5.88						
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Principal	Cities	and Zone	8
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Aberdeen, S. D. 6 Lewistom, Ida. 3 Aberdeen, Wash. 2 Lewistown, Mont. 5 Akron, Ohio 8 Lincoln, Neb. 6 Albany, N. Y. 8 Little Rock, Ark. 7 Albany, Ore. 3 Los Angeles, Cal. 5 Albuquerque, N. M. 6 Louisville, Ky. 8 Ardmore, Okla 7 Manconda, Mont. 4 Lowell, Mass. 8 Ardmore, Okla 7 Memphis, Tenn. 8 Ashland, Ore 4 Miles City, Mont. 5 Astoria, Ore. 2 Milwakee, Wis. 7 Acthison, Kan. 7 Minneapolis, Minn. 6 Atlanta, Ga. 8 Minot, N. D. 5 Austin, Tex. 7 Missoula, Mont. 4 Bellingham, Wash. 2 Newark, N. J. 8 Bellingham, Wash. 2 Newark, N. J. 8 Boise, Ida. 4 New Orleans, La. 8 Boston, Mass. 8 New Haven, Conn. 8 Boston, Mass. 8 New York, N. Y. 8 Bozeman, Mont. 4 Oakland, Calif. 5 Bremerton, Wash. 1 Oklahoma City 7 Bridgeport, Conn. 8 Olympia, Wash. 1 Brooklyn, N. Y. 8 Paterson, N. J. 6 Buffalo, N. W. 8 Portland, Meb. 6 Cambridge, Mass. 8 Philadelphia, Pa. 8 Centralia, Wash. 2 Phoenix, Arix. 6 Charlestom, W. V. 8 Portland, Me. 8 Centralia, O. 8 Ptovidence, R. 1 & Cleveland, O. 8 Ptovidence, R. 1 & Cleveland, O. 8 Ptovidence, R. 1 & Cleveland, O. 8 Ptovidence, R. 1 & Dayton, O. 8 Rochester, N. Y. 8 Deadwood, S. D. 5 Sacramento, Cal. 5 Des Moines, Ia. 7 San Diego, Calif. 6 Des Moines, Ia. 7 San Diego, Calif. 6 Des Moines, Ia. 7 San Diego, Calif. 6 Ference, Wash. 1 Sioux Edit, S. D. 5 Golumbus, O. 8 Rochester, N. Y. 8 Deadwood, S. D. 5 Sacramento, Cal. 5 Deveret, Colo. 6 Saram, Gre. 3 Detroit, Mich. 8 San Joe, Calif. 5 Ellensburg, Wash. 2 San Joe, Calif. 6 Fort Wayne, Ind. 8 Spokane, Wash. 3 Reconder, Cal. 5 Springfield, Mo. 7 Duluth, Minn. 7 San Diego, Calif. 6 Fort Wayne, Ind. 8 Spokane, Wash. 1 Grand Forks, N. D. 6 Sioux Falls, S. D. 6 Fort Wayne, Ind. 8 Spokane, Wash. 1 Fresno, Cal. 7 Terrer Haute, Ind. 8 Feyerett, Wash. 1 Sioux Edits, S. D. 6 Fort Wayne, Ind. 8 Spokane, Wash. 1 Grand Forks, N. D. 6 Sioux Falls, S. D. 6 Fort Wayne, Ind. 8 Spokane, Wash. 1 Fresno, Cal. 7 Terrer Haute, Ind. 8 Feyerett, Wash. 7 Willimington, D	Principal Citi	es and Zones
Abero, Ohio  Akron, Ohio  Akron, Ohio  Albany, N. Y.  Albany, Ore.  Albanya, Ore.  Albany, Ore.  Albany, Ore.  Albanya, Ore.  Albany, Ore.  Allantale, Ore.  Ale	Aberdeen, S. D6	Lewiston, Ida,3
Akron, Ohio	Aberdeen, Wash2	
Albuquerque, N. M. 6 Albuquerque, N. M. 6 Anaconda, Mont. 4 Ardmore, Okla 7 Arkansas City, Kn. 7 Ashland, Ore 4 Astoria, Ore. 2 Atchison, Kan. 7 Ashland, Ore 4 Allanta, Ga. 8 Minot, N. D. 5 Austin, Tex 7 Baltimore, Md. 8 Bellingham, Wash. 2 Bellingham, Wash. 2 Birmingham, Ala. 8 Boise, Ida 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Mass. 10 Brooklyn, N. Y. 8 Burlingten, Vt. 8 Butte, Mont. 4 Cambridge, Mass. 8 Charlestown, W. Va. 8 Charlestow	Akron, Ohio8	Lincoln, Neb6
Albuquerque, N. M. 6 Albuquerque, N. M. 6 Anaconda, Mont. 4 Ardmore, Okla 7 Arkansas City, Kn. 7 Ashland, Ore 4 Astoria, Ore. 2 Atchison, Kan. 7 Ashland, Ore 4 Allanta, Ga. 8 Minot, N. D. 5 Austin, Tex 7 Baltimore, Md. 8 Bellingham, Wash. 2 Bellingham, Wash. 2 Birmingham, Ala. 8 Boise, Ida 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Mass. 10 Brooklyn, N. Y. 8 Burlingten, Vt. 8 Butte, Mont. 4 Cambridge, Mass. 8 Charlestown, W. Va. 8 Charlestow	Albany, N. Y8	Little Rock, Ark7
Anaconda, Mont.	Albany, Ore3	
Ardmore, Okla	Albuquerque, N. M6	Louisville, Ky8
Arkansas City, Kn. 7 Ashland, Ore 4 Ashland, Ore 2 Astoria, Ore. 2 Astoria, Ore. 2 Atchison, Kan. 7 Atlanta, Ga. 8 Minot, N. D. 5 Austin, Tex 7 Baltimore, Md. 8 Baltimore, Md. 8 Bellingham, Wash. 2 Birmingham, Ala. 8 Bellingham, Wash. 2 Birmingham, Ala. 8 Boewark, N. J. 8 Boise, Ida 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Mass. 8 Bozeman, Mont. 4 Boston, Wash. 1 Brooklyn, N. Y. 8 Burlington, Vt. 8 Burlington, Vt. 8 Burlington, Vt. 8 Burlington, Vt. 8 Pendleton, Orc 3 Butte, Mont. 4 Centralia, Wash. 2 Charlestown, W. Va. 8 Charlestown, W. Va. 8 Charlestown, W. Va. 8 Cheyenne, Wyo. 5 Chicago, Ill. 7 Colicago, Ill. 7 Colicumbus, O. 8 Coffeyville, Kan. 7 Columbus, O. 8 Coffeyville, Kan. 7 Columbus, O. 8 Deadwood, S. D. 5 Denver, Colo. 6 Coffeyville, Kan. 7 Dubuth, Minn. 7 Salt Lake City 5 Denver, Colo. 6 Salem, Ore. 3 Des Moines, Ia. 7 Salt Lake City 5 Denver, Colo. 6 Salem, Ore. 3 Seattle, Wash. 1 Sioux City, Ia. 8 Ferrett, Wash. 1 Sioux Falls, S. D. 6 Grand Forks, N. D. 6 Grand Rapids, Mich. 8 Synacuse, N. Y. 8 Inchison, N. A. 8 Inchison, N. C. 8 Inchison, N. A. 8 Inchison, N. C. 8 Inchison, N	Anaconda, Mont4	Lowell, Mass8
Ashland, Ore	Ardmore, Okla7	Manchester, N. H8
Atchison, Kan. 7 Minneapolis, Minn. 6 Atlanta, Ga. 8 Minot, N. D. 5 Austin, Tex 7 Missoula, Mont. 4 Baltimore, Md. 8 Nashville, Tenn. 8 Bellingham, Wash. 2 Newark, N. J. 8 Berlingham, Ala. 8 New Haven, Conn. 8 Boise, Ida 4 New Orleans, La. 8 Boston, Mass. 8 New York, N. Y. 8 Bozeman, Mont. 4 Oakland, Calif. 5 Bremerton, Wash. 1 Oklahoma City 7 Bridgeport, Conn. 8 Olympia, Wash. 1 Brooklyn, N. Y. 8 Paterson, N. J. 6 Burfialo, N. Y. 8 Paterson, N. J. 6 Burlington, Vt. 8 Pendleton, Orc 3 Butte, Mont. 4 Pendleton, Orc 3 Charlestown, W. Va. 8 Pittsburgh, Pa. 8 Charlestown, W. Va. 8 Portland, Me. 8 Chayenne, Wyo. 5 Portland, Me. 8 Cheyenne, Wyo. 5 Portland, Orc. 2 Chicago, Ill. 7 Providence, R. I. 8 Cleveland, O. 8 Pt. Townsend, Wn. 1 Cleveland, O. 8 Pt. Townsend, Wn. 1 Clordiand, O. 8 Pt. Townsend, Wn. 1 Clordiand, O. 8 Rapid City, S. D. 5 Colfax, Wash. 3 Rochester, N. Y. 8 Deadwood, S. D. 5 Sacramento, Cal. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 Salt Lake City 5 Derwor, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Ell Paso, Texas 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Ellensburg, Wash. 2 San Joe, Calif. 5 Ell Paso, Texas 6 Salem, Orc. 3 Eugene, Orc. 3 Seattle, Wash. 3 Ft. Worth, Texas 7 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Fort Wayne, Ind. 8 Sprokae, Wash. 3 Ft. Worth, Texas 7 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Grand Rapids, Mich. 8 Sprokae, Wash. 1 Fresho, Cal. 5 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Grand Rapids, Mich. 8 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Grand Rapids, Mich. 8 Wallace, Ida. 3 Indianapolis, Ind. 8 Walla Walla, Wn. 3 Jackson, Miss. 8 Walla Walla,	Arkansas City, Kn7	Memphis, Tenn8
Atchison, Kan. 7 Minneapolis, Minn. 6 Atlanta, Ga. 8 Minot, N. D. 5 Austin, Tex 7 Missoula, Mont. 4 Baltimore, Md. 8 Nashville, Tenn. 8 Bellingham, Wash. 2 Newark, N. J. 8 Berlingham, Ala. 8 New Haven, Conn. 8 Boise, Ida 4 New Orleans, La. 8 Boston, Mass. 8 New York, N. Y. 8 Bozeman, Mont. 4 Oakland, Calif. 5 Bremerton, Wash. 1 Oklahoma City 7 Bridgeport, Conn. 8 Olympia, Wash. 1 Brooklyn, N. Y. 8 Paterson, N. J. 6 Burfialo, N. Y. 8 Paterson, N. J. 6 Burlington, Vt. 8 Pendleton, Orc 3 Butte, Mont. 4 Pendleton, Orc 3 Charlestown, W. Va. 8 Pittsburgh, Pa. 8 Charlestown, W. Va. 8 Portland, Me. 8 Chayenne, Wyo. 5 Portland, Me. 8 Cheyenne, Wyo. 5 Portland, Orc. 2 Chicago, Ill. 7 Providence, R. I. 8 Cleveland, O. 8 Pt. Townsend, Wn. 1 Cleveland, O. 8 Pt. Townsend, Wn. 1 Clordiand, O. 8 Pt. Townsend, Wn. 1 Clordiand, O. 8 Rapid City, S. D. 5 Colfax, Wash. 3 Rochester, N. Y. 8 Deadwood, S. D. 5 Sacramento, Cal. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 Salt Lake City 5 Derwor, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Denver, Colo. 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Ell Paso, Texas 6 Salem, Orc. 3 Des Moines, Ia. 7 San Diego, Calif. 5 Ellensburg, Wash. 2 San Joe, Calif. 5 Ell Paso, Texas 6 Salem, Orc. 3 Eugene, Orc. 3 Seattle, Wash. 3 Ft. Worth, Texas 7 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Fort Wayne, Ind. 8 Sprokae, Wash. 3 Ft. Worth, Texas 7 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Grand Rapids, Mich. 8 Sprokae, Wash. 1 Fresho, Cal. 5 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Grand Rapids, Mich. 8 Springfield, Mo. 7 Grand Forks, N. D. 6 St. Paul, Minn. 6 Grand Rapids, Mich. 8 Wallace, Ida. 3 Indianapolis, Ind. 8 Walla Walla, Wn. 3 Jackson, Miss. 8 Walla Walla,	Ashland, Ore4	Miles City, Mont
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Boise, Ida	Rirmingham Ala 8	New Haven Conn8
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Columbus, O.	Colfax, Wash3	Racine, Wis
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Helena, Mont. 4 Topeka, Kan. 7 Hot Springs, Ark. 7 Tucson, Ariz. 6 Houston, Tex. 8 Waco, Texas 7 Hutchinson, Kan. 6 Wallace, Ida. 3 Indianapolis, Ind. 8 Walla Walla, Wn. 3 Jackson, Miss. 8 Washington, D. C. 8 Jacksonville, Fla. 8 Wenatchee, Wn. 2 Jersey City, N. J. 8 Wheeling, W. Va. 8 Joplin, Mo. 7 Wilmington, Del. 8 Kansas City, Mo. 7 Wilmington, N. C. 8 La Grande, Ore. 3 Witchita, Kan. 7 Leavenworth, Kan. 7 Yakima, Wash. 2	Harrisburg, Pa8	Toledo, Ohio8
Hot Springs, Ark. 7 Tucson, Ariz. 6 Houston, Tex. 8 Waco, Texas 7 Hutchinson, Kan. 6 Wallace, Ida. 3 Indianapolis, Ind. 8 Wallace, Ida. 3 Jackson, Miss. 8 Washington, D. C. 8 Jacksonville, Fla. 8 Wenatchee, Wn. 2 Jersey City, N. J. 8 Wheeling, W. Va. 8 Joplin, Mo. 7 Wilmington, Del. 8 Kansas City, Mo. 7 Wilmington, N. C. 8 La Grande, Ore. 3 Witchita, Kan. 7 Leavenworth, Kan. 7 Yakima, Wash. 2	Helena, Mont4	Topeka, Kan
Hutchinson, Kan. 6 Wallace, Ida. 3 Indianapolis, Ind. 8 Walla Walla, Wn. 3 Jackson, Miss. 8 Washington, D. C. 8 Jacksonville, Fla. 8 Wenatchee, Wn. 2 Jersey City, N. J. 8 Wheeling, W. Va. 8 Joplin, Mo. 7 Wilmington, Del. 8 Kansas City, Mo. 7 Wilmington, N. C. 8 La Grande, Ore. 3 Witchita, Kan. 7 Leavenworth, Kan. 7 Yakima, Wash. 2	Hot Springs, Ark7	. Tucson. Ariz
Joplin, Mo	Houston, Tex8	Waco, Texas
Joplin, Mo	Hutchinson, Kan6	Walla Walla Wa
Joplin, Mo	Indianapolis, Ind8	Washington D. C
Joplin, Mo	Jackson, Miss	Washington, D. C &
Joplin, Mo	Jacksonvine, Fla0	Wheeling W V2 Q
La Grande, Ore3 Witchita, Kan7 Leavenworth, Kan7 Yakima, Wash2	Ionlin Mo 7.	Wilmington Del 8
La Grande, Ore3 Witchita, Kan7 Leavenworth, Kan7 Yakima, Wash2	Kansas City, Mo 7	Wilmington, N. C 8
Leavenworth, Kan7 Yakima, Wash2	La Grande, Ore3	Witchita, Kan
		Yakima, Wash2

Alaska. Hawaiian and Philippine Islands, etc.: The eighth zone rate of 12 cents for each pound or fraction thereof on all parcels weighing more than 4 ounces (except books, seeds, cuttings, bulbs, roots,

scions, and plants, weighing 8 ounces or less) applies (1) between the United States and the Hawaiian Islands; (2) between the United States and its postal agency at Shanghai, China; (3) between any two points other point in the United States; (4) between the United States and the Canal Zone (5) between the United States and the Philippine Islands; limit of weight 20 lbs, except Manila to which 50 lbs, may be sent; (6) to, from, or between Guam, Tutuila, and Manua and other islands of the Samoan group east of longitude 171 degrees west of Greenwich, and the United States and its other possessions; (7) between the United States and its naval vessels stationed in foreign waters.

Canada, Cuba: The rate of 12 cents for each pound or fraction thereof also applies to fourth-class matter, including seeds, cuttings, bulbs, roots, scions, and plants (but excepting books and other printed matter on which the rate is 1 cent for each two ounces or fraction thereof in all cases), weighing more than 4 ounces and not exceeding 4 pounds 6 ounces when

mailed to Canada and Cuba.

The Special-Delivery Fee is 10 cents in addition to

the regular postage.

The Limit of Weight of fourth-class matter is 70 pounds for parcels mailed for delivery within the first second and third zones, and 50 pounds for all other

Limit of Size: Parcel post matter may not exceed 84 inches in length and girth combined. In measuring a parcel the greatest distance in a straight line between the ends (but not around the parcel) is taken as tits length, while the distance around the parcel at its thickest part is taken as its girth. For example, a parcel 35 inches long, 10 inches wide, and 5 inches high measures 65 inches in length and girth combined.

Name and Address of Sender: A parcel of fourthclass matter may not be accepted for mailing unless it bears the name and address of the sender, which should be preceded by the word "From."

Sender's Receipt for Ordinary Parcel: When desired,

a receipt is furnished the sender of an ordinary fourthclass parcel by the mailing office upon payment of 1 cent. This fee does not insure the parcel against loss, and no receipt is obtained from the addressee on delivery. If either of the latter facilities is desired, the insurance service should be patronized.

### Insurance of Fourth-Class Mail

Fees and Conditions: Fourth-class or domestic parcel post mail (but no other) may be insured against loss, rifling, and irreparable damage upon payment of a fee of 3 cents for value not exceeding \$5, or 5 cents for value not exceeding \$25, or 10 cents for value not exceeding \$50, or 25 cents for value not exceeding \$100, in addition to the postage, both to be prepaid with stamps affixed. It may not be registered.

Such mail may be insured at any post office or sta-

tion thereof, or by rural carriers.

Return Receipts for Insured Parcels may be obtained by indorsing the parcels "Return receipt desired." Indemnity for Lost Insured Parcels is paid for the

actual value within the limit of insurance. No indemnity is payable on account of mere partial damage. However, when an article or any separate part thereof is so damaged as to render it wholly worthless, it is regarded as lost, provided it was packed and indorsed in accordance with the postal requirements. No indemnity is paid for labor, workmanship, etc., in re-pairing partial damage. Claims for indemnity must be filed within six month from date of mailing.

### Collect-On-Delivery Service

Conditions and Fee: Parcels of fourth-class or parcel post matter may be sent "C. O. D." from one domestic money-order post office to another on payment of a fee of 10 cents in addition to the postage, both to be prepaid with stamps affixed, but not to the Philippine Islands nor to any foreign country. The amount

to be remitted to the sender must not exceed \$50. The to be remitted to the sender must not exceed \$50. The remittance is made by post office money order, the fee therefor being included in the amount collected from the addressee. A "C. O. D." tag furnished by the postmaster must be filled in by the sender and attached to the parcel. The "C. O. D." fee also covers insurance against loss, rifling and irreparable damage up to \$50 actual value, when a 10 cents fee is paid, and \$100 actual value when a 25 cents fee is paid. For a fee of 25c \$100 may be remitted to the sender. This fee carries insurance up to \$100.

A Receipt is given to the sender of a "C. O. D." parcel at the time of mailing, but no return receipt is furnished, as the remittance shows that delivery has

been made

Examination of Contents of a "C. O. D." Parcel is not permitted until it has been receipted for and all

charges paid.

Indemnity for Lost "C. O. D." Parcels is paid under the conditions governing the payment of indemnity for lost insured parcels.

### International Parcel Post

This information deals only with countries on the Pacific Ocean. Any countries of destination on the Pacific and not listed below require letter postage. Parcels for foreign countries cannot be insured.

Postage: 12 cents a pound or fraction of a pound;

fully prepaid.

Weight Limit: 11 pounds, except Colombia, to which the greatest length of parcels is limited to 2 feet, with the greatest girth at 4 feet, and except to Ecuador, Mexico, Republic of Panama and Salvador, to which the weight limit is 20 pounds. In the case of parcels for or from non-steam served places in China, while they may weigh 11 pounds, they must not exceed one cubic foot in volume.

Customs declarations must accompany packages.

Parcel post packages may be sent to the following countries:

Australia, including Tasmania. Parcels cannot be registered.

Bolivia.

British Guiana.

Chile. Although service to Chile is suspended at the present time, arrangements have been made for a renewal of the convention and an early resumption is looked for. Instead of the maximum weight of 11 pounds allowed under the former arrangement, the maximum weight is now fixed at 25 pounds.

China. Parcels addressed for delivery in the following places are mailable subject to the rate and conditions applicable to parcels for Hongkong: Amoy, Canton, Chefoo, Foochow, Hankow, Hoihow, Ningpo, Shanghai, and Swatow. This applies only to parcels Shanghai, and Swatow. This applies only to parcels delivered at the British post office (or Agency) itself or within the restricted area of its delivery. The delivery area of the Amoy Agency includes Kulangsu, that of the Canton Agency includes Honam, that of the Foochow Agency includes Nantai, and that of the Hoihow includes Kiungchow. Parcels for the City of Shanghai are to include only such matter as may be admissible to domestic parcel post mails for the United admissible to domestic parcel post mails for the United States Postal Agency at Shanghai-e. g. books, etc.

Colombia. Costa Rica.

Ecuador. Limit of weight 20 pounds. Dutch Guiana. Parcels cannot be registered.

Guatemala.

Honduras (Republic of). Hongkong. See China.

Japan, including Formosa, Karafuto (Japanese

Saghalien) and Korea (Chosen).

Mexico. Limit of weight 20 pounds. The sender of a registered parcel-post package is entitled in case of loss, damage or rifling to an indemnity equal to the amount of actual loss incurred, but not exceeding the equivalent of 50 francs. The rate of 12 cents for each pound or fraction thereof also applies to

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fourth-class matter, including seeds, cuttings, bulbs, roots, scions, and plants (but excepting books and other printed matter on which the rate is 1 cent for each two ounces or fraction thereof in all cases) weighing more than 4 ounces and not exceeding 4 pounds 6 ounces.

Netherlands East Indies. Parcels cannot be registered. 2 copies of form of Customs Declaration must

be forwarded with each package.

New Zealand, including Fanning Island.

Nicaragua.
Panama (limit of weight to Panama 20 pounds). To the following named post offices: Aguadulce Alange, Anton, Arraijan, Atalaya, Bastimentos, Bejuco, Bocas de Cupe, Bocas del Drago, Bocas del Toro, Boqueron, Boquete, Bugaba, Cacique, Calodre, Cana, Canazas, Capira, Cermenc, Chagres, Chame-Changuinola, Chepigana, Chepo, Chiriqui Grande, Chitre Chorrera, Cituro, Colon, David Divala, Donoso, El Llano, El Real, Garachine, Gualaca, Gtarare Horcitos, Isla Grande, Jaque, Jurado, La Guayra, La Messa, La Palma, La Pintada, La Villa, Las Lojas, Las Minas, Las Polmas, Las Penas, Las Tablas, Llanosucio, Los Pozcs, Los Remedios, Macaracas, Miguel de la Borda, Montijo, Nata, Nombre de Dios, Ocu Ola, Otoque, Pacora, Palenque, Panama, Parita, Pedasi, Penonome, Pese, Pinogana, Playa Damas, Pocri de Aguadulce, Pocri de las Tablas, Portabelo, Puerto Obaldia, Rio de Jesus Rio Indio, Saboga, San Carlos. San Felix, San Francisco, San Lorenzo, San Miguel, San Pablo, Santa Fe, Santa Isabel, Santa Maria, Santago, Sixalola, Sona, Tabaga Tole, Tonosi, Tocuti Vento Fric, and Yaviza. Peru. 20 pounds limit.

Peru. 20 pounds limit.
Salvador. Two customs declaration forms required;
20 pounds limit. Sender of a registered parcel post
package is entitled in case of loss, damage or rifling,
to an indemnity equal to the amount of the actual loss
incurred, but not exceeding the equivalent of 50 francs.
Society Islands. Parcels cannot be registered.

Parcels addressed for delivery in the following places are subject to the rate and conditions applicable to parcels for Japan: Amoy, Changsha, Cheefoo, Foochow, Hangchow, Kiukiang, Newchwang, Peking, Shanghaikawan, Shasi Soochow, Tientsin, Tongku and Wuhu, China; or at the following places in Manchuria: Antoken (Antung), Bujum (Fushun), Choshun (Changchun), Dairen (Tairen, Talien, formerly Dalny), Daisekkio (Tashichiao), Daitoko (Tatungkou), Furanten (Pulentien), Gwaboten (Wafantien), Gaihei (Kaiping), Giukaton (Newchatun), Hishikc (Pitzuwo), Hoten (Mukden), Honkeiko (Pengshihu), Howojreo (Fenghuangcheng), Kaigen (Kalyuen), Kaijo (Haimueng), Kinshu (Chinchow), Koshurei (Kungchuling), Renzankiyan (Lienshankwan), Riujuton (Liushuton), Riojun, (Port-Arthur), Rioyo (Liaoyang), Senkinsai (Chienchinsai), Shiheigai (Ssupingchieh), Shinminfu (Shingmingfu), Shoto (Changtu), Sokato (Tsachokow), Sokaton (Suchiatun), Taikozan (Takushan), Tetsurei (Tiehling), Yendai (Yentai), Yugakujreo (Hsiungyocheng).

## Principal Articles Prohibited Transmission to Foreign Countries

Articles that are excluded from the domestic mails of the United States.

Written communications of the nature of personal correspondence.

Packages enclosed in a parcel but addressed to a person other than the person indicated in the address of the parcel itself,

Live or dead animals except live bees and dead insects and reptiles when thoroughly dried; fruits and vegetables which easily decompose, and substances which exhale a bad odor: lottery tickets or advertisements, or circulars relative to lotteries; all obscene or immoral articles; articles which in any way may damage or destroys the mails or injure the persons handling them. The presence, in an unsealed parcel, of sealed receptacles, mailable articles which cannot be safely

transmitted in unsealed receptacles, should not render the parcel unmailable, provided the contents of the sealed receptacles are plainly visible, or are unmistakably indicated by the method of packing or by a precise statement on the covers. But such sealed receptacles shall not be admitted to the parcel post unless inclosed in an outside cover open to inspection.

Merchandise, not otherwise prohibited, can also be sent at the sender's risk to all foreign countries except Belgium and Russia when fully prepaid at the letter rate of postage; but sealed packages are excluded from the mails to Canada, Cuba, Mexico and the Republic of Panama, unless they are in the usual and ordinary form of letters.

Liquids are mailable to Australia, Costa Rica, Hong-kong, Mexico, New Zealand, Panama, Salvador.

### PRINCIPAL PORTS OF WORLD ICE-BOUND DURING WINTER

## Approximate Dates of Closing and Opening of Navigation

Canada.		losed ov. 20 ov. 20	Open April April	<b>3</b> 0
Finland.	Bjorneborg No Helsingfors Ja Nikolaistad (see Vasal).	ov. 30 ov. 30 n. 10  ec. 1	April April April  May	25 20
	Vasal D	ec. 1 ec. 10	May May	5
Russia	Archangel (White Sea) O Astrakhan (Casp. Sea) No Pernau (Baltic) De Riga (Baltic) Fe Rostof (Black Sea) De Petrograd No Taganrog (Black Sea) De	ov. 7 ec. 1 b. 5 ec. 15 ov. 25	May April May Mar. April May April	2 1 25 1
Sweden.	Gefle Ja Kalmar Fe Hernosand De Nykoping De Ornokoldsvik De Sundsvall De	b. 10 c. 10 c. 20 c. 10	April Mar. April Mar. April April	15 20 20 30

The Ports on the Great Lakes of Canada and United States are generally closed from the end of November to the end of April.

### DISTRESS SIGNALS

### Prescribed by International Marine Conference

In the daytime-

1. A gun fired at intervals of about a minute.

2. The International Code signal of distress indicated by N. C.

3. The distant signal, consisting of a square flag, having either above or below it a ball or anything resembling a ball.

4. Rockets or shells as prescribed below for use at night.
5. A continuous sounding with a steam whistle or any fog signal apparatus.
At night—

1. A gun fired at intervals of about a minute.

2. Flames on the vessel (as from a burning tar barrel, oil barrel, etc.)

3. Rockets or shells bursting in the air with a loud report and throwing stars of any color or description, fired one at at time at short intervals.

4. A continuous sounding with a steam whistle or any

fog signal apparatus.

All officers and employees of the Life Saving Service will hereafter recognize any of these signals when seem or heard as signals of distress and immediately proceed to render all possible assistance.



# Telegraph and Cable Rates

Full Rate (Expedited Service)

### TELEGRAPH RATES FROM PACIFIC COAST

	From	From	From	From
То	British	Wash-	Oregon	Cali-
10	Columbia	ington	Oregon	fornia
Alabama	100-7	100-7	100-7	100-7
Alberta	75-5	75-5	100-7	100-7
Arizona	75-5	75-5	60-4	60-4
Arkansas	100-7	100-7	100-7	100-7
British Columbia		50-3	50-3	60-4
California	60-4	60-4	50-3	
Colorado	75-5	75-5	75-5	75-5
Connecticut	100-7	100-7	100-7	100-7
Delaware	100-7	100-7	100-7	100-7
Dist. of Columbia.	100-7	100-7	100-7	100-7
Florida	100-7	100-7	100-7	100-7
Georgia	100-7	100-7	100-7	100-7
Idaho	60-4	50-3	50-3	60-4
Illinois	75-5	75-5	75-5	75-5
Indiana	100-7	100-7	100-7	100-7
Iowa	75-5	75-5	75-5	75-5
Kansas	75-5	75-5	75-5	75-5
Kentucky	100-7	100-7	100-7	100-7
Louisiana	100-7	100-7	100-7	100-7
Maine	100-7	100-7	100-7	100-7
Manitoba	75-5	75-5	75-5	100-7
Maryland	100-7	100-7	100-7	100-7
Massachusetts	100-7	100-7	100-7	100-7
Michigan	100-7	100-7	100-7	100-7
Minnesota	75-5	75-5	75-5	75-5
Mississippi	100-7	100-7	100-7	100-7
Missouri	75-5	75-5	75-5	75-5
Montana	60-4	60-4	60-4	60-4
Nebraska	75-5	75-5	75-5	75-5
Nevada	75-5 100-7	60-4	60-4	50-3
New Brunswick		100-7	100-7	100-7
Newfoundland	160-13 100-7	160-13 100-7	160-13 100-7	160-13 100-7
New Hampshire New Jersey	100-7	100-7	100-7	100-7
New Mexico	75-5	75-5	75-5	75-5
New York	100-7	100-7	100-7	100-7
North Carolina	100-7	100-7	100-7	100-7
North Dakota	75-5	75-5	75-5	75-5
Nova Scotia	100-7	100-7	100-7	100-7
Ohio	100-7	100-7	100-7	100-7
Oklahoma	100-7	75-5	75-5	75-5
Ontario	100-7	100-7	100-7	100-7
Oregon	50-3	50-3	200-,	50-3
Pennsylvania	100-7	100-7	100-7	100-7
Quebec	100-7	100-7	100-7	100-7
Rhode Island	100-7	100-7	100-7	100-7
Saskatchewan	65-4	100-7	100-7	100-7
South Carolina	100-7	100-7	100-7	100-7
South Dakota	75-5	75-5	75-5	75-5
Tennessee	100-7	100-7	100-7	100-7
Texas	100-7	75-5	75-5	75-5
Utah	75-5	60-4	60-4	60-4
Vermont	100-7	100-7	100-7	100-7
Virginia	100-7	100-7	100-7	100-7
Washington	50-3		50-3	60-4
West Virginia	100-7	100-7	100-7	100-7
Wisconsin	75-5	75-5	75-5	75-5
Wyoming	75-5	75-5	75-5	75-5
, ,		<u>,</u>		

Rate after name, in table, is for ten words or less; figure after the hyphen indicates the rate per word after first ten. Night Letters: The rate for night letters of fifty words or less is the same as the rate for a day message of ten words or less. For each additional ten or fraction of ten

day rate.

Day Letters: (Western Union only). The rate for day letters of fifty words or less is one and one-half times the standard night letter rate, and one-fifth of the initial rate

words over the fifty, the rate is one-fifth of the ten-word

for such fifty words is charged for each additional ten

### REDUCED NIGHT MESSAGE Effective January 1st, 1919

Where the Message	the Full Rate is:	The Reduced Night Message Rate is:		The Night Letter Rate is:	
For 10 words or less	For each additional word	For 10 words or less	For each additional word	For 50 words or less	For each additional 10 words or fraction
.25	.02	.20	.01	.25	.05
.30	.02	.25	.01	.30	.06
.35	.02	.25	.01	.35	.07
.40	.03	.30	.01	.40	.08
.50	.03	.35	.01	.50	.10
.60	.04	.40	.01	.60	.12
.75	.05	.45	.02	.75	.15
1.00	.07	.50	.02	1.00	.20

The general conditions of the service being the same, the cheapest night rate, according to the length of the message, will always be charged, provided the message is written in plain language throughout. Code language is not permissible in Night Letters.

## CABLE RATES FROM PACIFIC COAST TO PRINCIPAL FOREIGN STATIONS

### To Central and South America

	Per Word			
То	From British Columbia	From Wash- ington	From Oregon	From Cali- fornia
Argentine Republic	.77	.62	.77	.77
Bolivia	77	.62	.77	.77
Brazil:	l "''	.02		•
Manaos	1.44	1.36	1.36	1.44
Para	.85	.85	.85	.85
Pernambuco	.70	.70	.70	.70
Rio de Janeiro.	.85	.85	.85	.85
Rio Grande do				
Sul	.85	.85	.85	.85
Santos	.85	.85	.85	.85
British Guiana	.41	.41	.41	.41
Chile	.77	.62	.77	.77
Costa Rica	.61	.50	.56	.56
Dutch Guiana	1.43	1.43	1.43	1.43
Ecuador	.77	.62	.77	.77
French Guiana	1.36	1.36	1.36	1.36
Guatemala	.56-61	.50	.56	.51-56
Honduras	.61	.50	.56	.56
Nicaragua	.56-61	.50	.56	.51-56
Paraguay	.77	.62	.77	.77
Peru	.77	.62	.77	.77
Republic of				
Panama:	ŀ		•	
Colon and				
Panama	.62	.42	.50	.50
Salvador	.56-61	.50	.51-56	.51-56
U. S. of Colombia:	1			
Buenaventura	.77	.62	.77	.77
Other offices	.87	.77	.87	.87
Uruguay	.77	.62	.77	.77
Venezuela	1.05	1.05	1.05	1.05

To Europe and Beyond

	Per Word				
То	From Wash- ington	From British Columbia	From Oregon	From Cali- fornia	
Australia:		Solumbia			
New South					
Wales	.58	.58	.58	.58	
Oueensland	.58	.58	.58	.58	
South Australia.	.58	.58	.58	.58	
Tasmania	.58	.58	.58	.58	
Victoria	.58	.58	.58	.58	
Western	.50	.50	.50	.50	
Australia	.58	.58	.58	.58	
Austriat	.44	.44	.44	.44	
Belgium†	.37	.37	.37	.37	
Cape Colony	.98	.98	.98	.98	
China Macao	1.23	1.19	1.19	1.15	
Other offices	1.18	1.14	1.14	1.10	
Denmark	.47	.47	.47	.47	
Egypt, Alexandria.	.62	.62	.62	.62	
England	.37	.37	.37	.37	
France	.37	.37	.37	.37	
Germany†	.37	.37	.37	.37	
Gibraltar	.55	.55	.55	.55	
Holland	.37	.37	.37	.37	
Hungary†	.44	.44	.44	.44	
India	.78	.78	.78	.78	
Ireland	.37	.37	.37	.37	
Italy	.43	.43	.43	.43	
Japan, via Northern	1.84	1.84	1.84		
Japan, via Pacific.	1.29	1.25	1.25	1.21	
Norway	.47	.47	.47	.47	
Philippines, Manila	1.08	1.04	1.04	1.00	
Portugal	.51	.51	.51	.51	
Russia in Europe.	.55	.55	.55	.55	
Sardinia	.43	.43	.43	.43	
Scotland	.37	.37	.37	.37	
Sicily	.43	.43	.43	.43	
Spain	.50	.50	.50	.50	
Sweden	.50	.50	.50	.50	
Switzerland	.42	.42	.42	.42 .58	
Tasmania	.58	.58	.58		
Turkey in Europet	.48	.48	.48	.48	

All rates subject to change without notice. Rates quoted are per word.

These rates were suspended during the war.

### Cable Letters

Twelve words to London and Liverpool for \$1.75. Excess words, 5c. To other points in Great Britain and Ireland, twelve words for \$1.94. Excess words 6c. To Holland and Belgium,\* twelve words for \$2.01. Excess words 7c. To Havana, Cuba, twelve words for \$1.45. Excess words 4c. To other places in Cuba, twelve words for \$1.97. Excess words 8c. To Honolulu twelve words (from California points) \$1.00. Excess words 8c. From all other Pacific Coast points, twelve words \$1.60. Excess words 8c. Cable letters must be in plain language of the country of origin or destination.

### Week-End Letters

The cheapest cable service offered by any company anywhere—twenty-four words for \$2.15 to London and Liverpool. Excess words 5c. To other points in Great Britain and Ireland, twenty-four words for \$2.46. Excess words 6c. To Holland and Belgium,\* twenty-four words for \$2.65. Excess words 7c. To Honolulu, twenty-four words (from California points), \$1.50. Excess words 6c. From all other Pacific Coast points, twenty-four words for \$2.10. Excess words 6c. Week-end letters may be filed up to midnight Saturday and will be delivered Monday morning. Week-end letters must be in plain language of the country of origin or destination.

### Deferred Service at Half Rates

For messages in plain English that will stand the delay incident to being subordinated to full paid messages, but

otherwise delivered as promptly as possible, the rates are half the regular cable rates, except that on messages to Great Britain and Ireland they are 3c per word less than half rates.

### CABLE RATES TO ALASKA

## Cable Rates to Alaskan Points from Pacific Coast Stations

Before the hyphen, rate for ten words or less, after the hyphen, rate for each additional word. Night rate from Seattle is 75 per cent of single word day rate.

То	From Seattle	From Portland	From San Fran- cisco
Beaver Dam	\$2.00-20	\$2.25-22	\$2.60-24
	2.00-20	2.25-22	2.60-24
Boundary			
Chena	2.00-20	2.25-22	2.60-24
Circle City	2.00-20	2.25-22	2.60-24
Copper Center	2.00-20	2.25-22	2.60-24
Cordova	1.50-15	1.75-17	2.10-19
Delta	2.00-20	2.25-22	2.60-24
Donnely	2.00-20	2.25-22	2.60-24
Douglas	1.00-10	1.25-12	1.60-14
Eureka	3,00-20	2.25-22	2.60-24
Fairbanks	2.00-20	2.25-22	2.60-24
Fort Davis	2.80-28	3.05-30	3.40-32
	2.00-20	2.25-22	2.60-24
Fort Edgebert			
Fort Gibbon	2.00-20	2.25-22	2.60-24
Fort Liscum	1.50-15	1.75-17	2.10-19
Golsova	2.80-28	3.05-30	3.40-32
Gulkana	2.00-20	2.25-22	2.60-24
Hadley	1.00-10	1.25-12	1.60-14
Haines	1.00-10	1.25-12	1.60-14
Hogan	2.00-20	2.25-22	2.60-24
Hot Springs, Tanana	2.00-20	2.25-22	2.60-24
Tuneau	1.00-10	1.25-12	1.60-14
Ketchikan	1.00-10	1.25-12	1.60-14
Kotlik	3.80-38	4.05-40	4.40-42
Koyukuk	2.50-25	2.75-27	3.10-29
Louden	2.50-25	2.75-27	3.10-29
McCallum	2.00-20	2.25-22	2.60-24
McCarty		2.50-22	2.85-24
Minto (mail Tolvano)	2.00-20	2.25-22	2.60-24
Menone	2.00-20	2.25-22	2.60-24
Nenana	2.80-28	3.05-30	3.40-32
Nome			1 11 1 1 1 1
Nulato	2.50-25	2.75-27	3.10-29
Petersburg	1.00-10	1.25-12	1.60-14
Rampart	3.00-20	2.25-22	2.60-24
Richardson	2.00-20	2.25-22	2.60-24
St. Michael	2.80-28	3.05-30	3.40-32
Salcha	2.00-20	2.25-22	2.60-24
Seward	1.50-15	1.75-17	2.10-19
Sitka	1.00-10	1.25-12	1.60-14
Skagway	1.00-10	1.25-12	1.60-14
Teikhell	2.00-20	2.25-22	2.60-24
Tolovana	2.00-20	2.25-22	2.60-24
Tonsina	2.00-20	2.25-22	2.60-24
Unalakleet	2.80-28	3.05-30	3.40-32
Valdez	1.50-15	1.75-17	2.10-19
Wortmans	2.00-20	2.25-22	2.60-24
Wrangell	1.00-10	1.25-12	1.60-14
			,

### WIRELESS RATES TO ALASKA

Wireless Rates to Principal Alaskan Points From Coast Cities via Marconi

Seattle to—	Rate	Rate
Ketchikan	\$1.00-10	\$ .80-8
Juneau	1.00-10	.80-8
Thane		.80-8
Douglas	1. <b>00-1</b> 0	.80-8
Treadwell	1.00-10	.80-8
Jualin		1.30-13
La Touche*	2.75-27	

Vancouver, B. C. to-	Rate	Rate
Ketchikan	1.40-13	1.10-10
Juneau	1.40-13	1.10-10
Thane	1.40-13	1.10-10
Douglas	1.40-13	1.10-10
Treadwell	1.40-13	1.10-10
Jualin	2.00-19	1.60-15
La Touche*	2.90-28	
Portland, Ore., to-		
Ketchikan	1.25-12	1.05-9
Juneau	1.25-12	1.05-9
Thane	1.25-12	1.05-9
Douglas	1.25-12	1.05-9
Treadwell	1.25-12	1.05-9
Jualin	1.85-18	1.55-14
La Touche*	2.75-27	
San Francisco to-		
Ketchikan	1.50-13	1.20-11
Juneau	1.50-13	1.20-11
Thane	1.50-13	1.20-11
Douglas	1.50-13	1.20-11
Treadwell	1.50-13	1.20-11
Jualin	2.10-19	1.70-16
La Touche*	3.10-29	•
771 1 1 1 4 75 · H		

The column marked "Rate" covers ten words fast message; or fifty words in English as a Night Letter. The night rate is for ten words, delivered the following morning.

\*Via government wireless station; North Head, Wash. Fast message and Night Letter services only; no night

### Cable Letters, Week-End Letters and Deferred Cable Service

New forms of cable service, known as cable letters, week-end letters and deferred cable service have been introduced by the Western Union Telegraph Company.

### THE RULE OF THE ROAD AT SEA Aids to Memory, in Four Verses

1. Two Steamships Meeting-When both sidelights you see ahead,

Port your helm and show your Red.

Two Steamship Passing-Green to Green, or Red to Red.

Perfect safety: go ahead!

Two Steamships Crossing-Note: This is the position of greatest danger; there is nothing for it but good lookout, caution and judgment.

If to your starboard Red appear, It is your duty to keep clear— To act as judgment says is proper— To Port, or Starboard, Back or Stop her. But when upon your port is seen

A steamer's starboard light of green, There's not so much for you to do, For Green to port keeps clear of you.

4. All Ships Must Keep a Good Look-Out—Both in safety and in doubt

Always keep a good look-out; In danger, with no room to turn, hase her! Stop her, Go astern!

### TIME EQUIVALENTS

Two o'clock p. m. at Cape Town, Durban, and throughout South Africa, corresponds to noon at Greenwich; also

Belgium, Faroes, France, Gibraltar, Portugal, (Central Meridian), noon (Standard zone time).

Spain (same as above).
Mid Europe, 15 degrees E., 1 p. m. (Standard zone time). East Europe and Egypt, 30 degrees E. (Central meridian) 2 p. m. (Standard zone time).

Mauritius, etc., 60 degrees East (Central meridian) 4

p. m. (Standard zone time).

Chagos Archipel, 75 degrees East (Central meridian) 5 (Standard zone time) p. m.

India, 821/2 degrees E, (Central meridian), 5:30 p. m. (Standard zone time).

Calcutta, 90 degrees E. (Central meridian), 6 p. m. (Standard zone time).

Burma, 97½ degrees E. (Central meridian), 6:30 p. m. (Standard zone time).

Straits Settlements, 105 degrees E. (Central meridian), p. m. (Standard zone time).

Hongkong and Borneo, 120 degrees E. (Central meridian), 8 p. m. (Standard zone time).

West Australia, 120 degrees E. (Central meridian), 8

Japan and Chosen, 135 degrees E. (Central meridian), 9

p. m. (Standard zone time). South Australia, 1421/2 degrees E. (Central meridian),

9:30 p. m. (Standard zone time).
Victoria, New South Wales, Queensland and Tasmania,
150 degrees E. (Central meridian), 10 p. m. (Standard

zone time)

New Zealand, 1721/2 degrees E., 11:30 p. m. (Standard zone time).

Iceland and Sierra Leone, 15 degrees W. (Central meridian), 11 a.m. (Standard zone time).

### United States

Atlantic, 60 degrees West (Central meridian), 8 a. m. (Standard zone time).

Eastern, 75 degrees West (Central meridian), 7 a. m. Central, 90 degrees West (Central meridian), 6 a. m. Mountain, 105 degrees West (Central meridian), 5 a. m. Pacific, 120 degrees West (Central meridian), 4 a. m.

### Brazil

Brazil, 30 degrees West, 10 a. m. (Standard zone time). Brazil, 45 degrees West, 9 a. m. (Standard zone time). Brazil, 60 degrees West, 8 a. m. (Standard zone time). Brazil, 75 degrees West, 7 a. m. (Standard zone time).

Yukon, 135 degrees West, 3 a.m. (Standard zone time). Sandwich Islands, 1571/2 degrees West, 1:30 a. m. (Standard zone time).

Samoa, 1721/2 degrees West, 12:30 a. m. (Standard zone time).

### PURCHASING POWER OF LATIN-**AMERICA**

The following gives the area of each country, its population, and its estimated purchasing power expressed in terms of an equivalent population in the United States:

		Equivalent
Area		Population
Sq. Mile	Population	in U. S.
1,153 400	8,000,000	3,250,000
514,464	2,535.000	200,000
3,301.950	25,000,000	2.800,000
290,000	3,800,000	760,000
494,340	6,000,000	55,000
89,420	300,000	6,000
46,352	90,000	
31,550	50,000	
2.75.331	1,500.000	50,000
164,090	750.000	30,000
680,000	4,500,000	100,000
72,057	1,250,000	85,000
394,154	3,000,000	75,000
	Sq. Mile 1,153 400 514,464 3,301,950 290,000 494,340 89,420 46,352 31,550 2,75,331 164,090 680,000 72,057	Sq. Mile         Population           1,153 400         8,000,000           514,464         2,535,000           3,301,950         25,000,000           290,000         3,800,000           494,340         6,000,000           89,420         300,000           46,352         90,000           31,550         50,000           2.75,331         1,500,000           164,090         750,000           72,057         1,250,000

Elliott 5048

Cable Address "MIYATAKE"

## MIYATAKE BROS.

IMPORTERS --

SEATTLE, U.S.A. 316 Maynard Avenue Specializing in Sulphur, Lumber, Braids and Canned Goods

# Principal Sources of Pacific Products

Anisced—China, Japan. Asbestos—Canada. Awaroot—Hawaiin Islands. Balata-Panama. Bamboo Shoots—China.
Bamboo Ware—China. Bananas—Colombia, Lesser Islands of Pacific, Ha-waiian Islands, Ecuador, Nicaragua, Panama, Honduras, Guatemala, Costa Rica. Bean Cake—Siberia. Beans—India, Chile, Manchuria, Siberia, Chosen.
Betel Nuts—Dutch East Indies.
Bismuth—Australia, South America. Bones—Australia, India.
Borate of Lime—Chile, Peru. Borax—Chile. Braids—Japan. Bristles-China Butter—Australia, New Zealand, Chile.
Cacao—Colombia, Peru, Ecuador, Straits Settlements.
Camel Hair—Siberia, Russia, China. Camphor—China, Japan. Canes-Straits Settlements. Carpets—China.
Casings—Australia.
Cassia—China. Caucho—Ecuador. Cedar—Costa Rica Celluloid Goods-Japan. Celluloid Goods—Japan.
Cement—Japan.
Cheese—Australia, New Zealand.
Chillies—Japan.
Chinchilla—Chile.
Chinchona—Dutch East Indies.
Cigarettes—Philippines. Cigars-Philippines. Coal-Australia, Japan, Chile, Canada. Cochineal-Peru, Cocoa Nuts-Panama, Honduras, Ecuador, Dutch East Indies, South Sea Islands, Philippines, Straits Settlements, Indo-China, Lesser Islands of Pacific.

Coffee—Ceylon, Dutch East Indies, Colombia, Costa Rica, Philippines, Straits Settlements, Hawaiian Islands, Ecuador, Guatemala, El Salvador, Nicaragua.

Conel—Dutch Fact Indies Copal-Dutch East Indies. Copper-Alaska, Australia, Canada, Chile, China, Japan, Copra—Australia, China. Dutch East Indies, South Sea Islands, Philippines. Straits Settlements, Indo-China, Lesser Islands of Pacific. Cordage—Philippines.
Cotton—India, China, Japan, Siam, Chile.
Ebony—Siam. Egg Products—China. Embroideries—China, Japan, Philippines. Eucalyptus—Australia. Feathers—China. Fertilizers—Australia, Japan. Fiber—Dutch East Indies, Mexico. Fish-Alaska, Canada, Indo-China, Mexico. Flour-Australia, New Zealand, Canada, Dutch East Indies, Japan. Fruits-Australia, New Zealand, Canada, China, Chile, Mexico, Ecuador. Furs-China, Chile, Alaska, Canada. Galena-China. Gambier-Dutch Indies, Straits Settlements Gamboge-Siam. Ginger-China, Japan. Glycerine-Japan. Gold-Alaska, Australia, Canada, Colombia, Chile, Chosen, Mexico, Ecuador, Costa Rica. Grain-Australia, Canada, New Zealand, India, Chile.

Graphite-Japan.

Guano-Peru.

Gums-Australia, New Zealand, Dutch East Indies, Philippines, Siam.

Gutta Percha—Siam, Straits Settlements. Gunnies-China. Hair-China, Australia. Hardwoods-Australia, New Zealand, Costa Rica, Pa-Hares-Australia. Hats-Philippines, Japan, Peru, Panama. Hemp-Philippines. Hempseed-Manchuria. Hides Australia, New Zealand, China, Dutch East Indies, Chile, Siam, Indo-China, Mexico, Peru, Ecuador. Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama. Honey—Australia, New Zealand, Chile. Horns—Australia, New Zealand, Dutch East Indies. Human Hair Nets—China, Japan. Indigo—China.
Iodine—Japan, Chile.
Ivory Nuts—Ecuador, Panama. Ipecac Root-Panama. Isinglass-Japan Tams-Australia Jute—China, India.

Kapoc—Dutch Indies, Philippines.

Laces—China, Japan, Philippines.

Molybdenite—China. Narcissus Bulbs—China. Nitrates—Chile.
Nutmegs—Straits Settlements. Oils-China, Dutch East Indies, South Sea Islands, Philippines, Japan, Manchuria, Indo-China, Mexico. Orchillas—Ecuador. Ores—Australia, Canada, China, Chile, Indo-China, Mexico, Peru, El Salvador, Panama.

Oysters—Chile. Palm Leaf Fans—China. Peanuts—Dutch East Indies, Philippines, Japan, China. Paper—China, Japan. Peas—India, Mexico. Pearls-Australia, Mexico. Pearl Shell-Australia, Straits Settlements, Philippines, Lesser Islands of Pacific.
Pepper—China, Siam, Straits Settlements, Indo-China. Petroleum—Dutch East Indies. Piece Goods—India, Japan. Piece Goods—India, Japan.

Pine Oils—Australia.

Portatoes—Canada, Chile.

Precious Stones—Colombia.

Rabbits—Australia, New Zealand.

Rabbit Skins—Australia, New Zealand.

Rattanware—China. Dutch East Indies, Straits Settlements. Lesser Islands of Pacific ments. Lesser Islands of Pacific. Rice—China, Japan, Dutch East Indies, Indo-China, Hawaiian Islands, Peru. Reindeer Meat—Alaska.

Rubber—Dutch East Indies, Colombia, Straits Settlement, Peru, Ecuador, Guatemala, El Salvador, Nicaragua, Panama. Salt-Chile, Formosa. Sapan Wood-Philippines. Sesamum-Chile, Mexico. Shells-Dutch East Indies, Lesser Islands of Pacific. Silks-China, Japan Silver—Colombia, Mexico. Sinews-Siam. Skins—Australia, New Zealand, China, Japan, Dutch East Indies, Siam. Chile, Peru, Mexico, Indo-China, Guatemala, El Salvador, Honduras, Nicaragua. Spelter-Australia, China.
Spices-Dutch East Indies, South Sea Islands, Siam,

Straits Settlements.

Leather-Australia, New Zealand, Japan, Chile.

Lacquerware-Japan.

Linseed—China. Lumber—Canada, China, Dutch East Indies, Chile, Siberia.

Mace-Dutch East Indies.

Maguey-Philippines.

Maize—Dutch East Indies, Indo-China.

Mahogany—Guatemala, Costa Rica. Manganese—Chile, Costa Rica.

Mattings-China.

Meats-Australia, New Zealand.

Milk-Canada.

Minerals—Australia, Canada, China, Chile, Mexico, Peru, Honduras, Nicaragua, Costa Rica.

Sticlac-Siam

Straw Boards--China.

Sugar—Dutch East Indies, Colombia, Japan, Formosa, Lesser Islands of Pacific, Mexico, Peru, Guatemala, Nicaragua, El Salvador.

Sulphur-China, Japan, Chile.

Talc-Manchuria.

Tallow-Australia, New Zealand, China, Siam,

Tanning Barks—Australia.

Tapioca—Dutch East Indies, Straits Settlements.

Taro-Lesser Islands of Pacific.

**Tar Oils**—Australia.

Tea-China, India, Japan, Java, Formosa.
Tin-China, Straits Settlements, Siam, Australia.
Tobacco-China, Japan, Philippines, Dutch East Indies, Lesser Islands of Pacific.

Trepang—Lesser Islands of Pacific. Turkeys—Australia.

Wax-Chile, Mexico, Japan.

Wines—Australia, Colombia, Chile. Wolfram—Siam, Dutch East Indies, Australia.

Wool-Australia, New Zealand, Ecuador, Peru.

### PRINCIPAL PRODUCTS OF EXPORT FROM COUNTRIES ON THE PACIFIC

Alaska-Fish (frozen and canned) particularly salmon, reindeer meat, minerals, chiefly gold and copper.

Australia-Preserved and canned meats, frezen rabbits, hares, turkeys, fruits of all kinds, fresh, dried and canned, cheese, butter, honey, gums, hides and skins, all kinds of minerals and ores, bismuth, hardwood timbers, jams, pulp, tanning barks, eucalyptus, pine and tar oils, pearl shells, leather, grain, flour, rabbit skins, coal, copra, casings, tallow, horns, hair, bones, fertilizers, wines, wool.

Canada—Lumber, fish, frozen and canned, fruits, as-bestos, wheat, flour, potatoes, milk, minerals and metals of all kinds.

Chile—Nitrates, hides, skins, sulphur, minerals, gold, silver, copper, wheat, barley, wines, coal, beans, borax, cotton, salt, timber, potatoes, honey, leather, wax, butter, fruit, borate of lime, manganese, chinchilla, ores, iodine.

China—Teas, silks, spices, camel hair, skins, bristles, furs, cotton, jute, hemp, star aniseed, steel, iron, egg products, tallow, gall nuts, oils of all kinds, hides, rice, mattings, cassia, peanuts, rattanware, palm leaf fans, ginger, tin, feathers, molybdenite, galena, spelter, copper, mineral ores, hair nets, embroideries, handmade laces, tobacco, pepper, rubber, copra, sulphur, narcissus bulbs, woolens, bambooware, gunnies, paper, fruit, copra, sulphur, timber, bamboo shoots, lacquerware, camphor, indigo, strawboards, linseed, carpets.

Chosen—Gold, beans, rice.

Colombia-Gold, silver, precious stones, wines, sugar, cacao, coffee, bananas, rubber.

Costa Rica-Coffee, gold, silver, hides, manganese, hardwoods, bananas.

Dutch East Indies-Rubber, tin, tea, spices, coffee, copper, kapoc, skins, hides, cocoanut oil, tobacco, sugar, chinchona, maize, tapioca, wood, gum, mace, gambier, horns, nutmegs, rattans, wax, peanuts, rice, betel nuts, flour, wolfram, copal, shells, pertroleum and products, fiber, citronella oil.

Ecuador-Cacao, Panama hats, coffee, hides, wool, gold, caucho, ivory nuts, rubber, bananas, orchillas, fruits, vegetables.

El Salvador—Coffee, sugar, bullion, ores, hides, skins, rubber.

Formosa-Tea, sugar, salt.

Guatemala—Bananas, coffee, hides, mahogany, rubber, skins, sugar.

Hawaiian Islands-Sugar, rice, coffee, awaroot, bananas, canned and fresh pineapples.

Honduras-Minerals, bananas, cocoanuts, coffee, hides,

India—Rice, beans, peas, wheat, piece goods.

Indo-China-Rice, maize, zinc ore, skins, buffalo hides, rubber, copra, pepper, hides, vegetable and fish oils, dry fish.

Japan—Coal, graphite, vegetable wax, cotton and silk, piece goods and raw silk, ginger, beans, chillies, oils of all kinds, peanuts, tobacco, teas, celluloid goods, all classes of leather, camphor, glycerine, fertilizers, sulphur, rice, isinglass, iodine, Panama hats, copper, cereals, braids, mattings, porcelains, cement, flour,

Lesser Islands of Pacific-Bananas, yams, sugar cane, cocoanuts, tobacco, taro, trepang, pearl shell, copra, rattans.

Manchuria—Soya beans, hempseed, seamum, oils, talc. Mexico—Gold, silver and other metals, oils, hides, skins, limes, sesame, peas, ores, tomatoes, ixtle fiber, sugar, fish wax, pearls, cocoanuts.

New Zealand-Meats, preserved and canned, particularly frozen lamb, cheese, butter, honey, kauri gum, hemp, rabbit skins, hides, leather, fresh fruit, grain, flour, tallow, timber.

Nicaragua-Coffee, hides, skins, rubber, minerals, bananas, sugar.

Panama—Hides, ivory nuts, ipecac root, balata, rubber, cocoanuts, bananas, hardwoods, ores,

Peru-Sugar, silver, copper, ores, cotton, lama and other wools, cochineal, hides, borates, guano, rice, rubber, cocoa, alcohol, goat skins, Panama hats.

Philippines—Cigars, cigarettes, tobacco, hemp, laces and embroideries, cordage, coffee, gum, kapoc, oils, copra, peanuts, human hair nets, maguey, sugar, sapanwood, hats.

Siam-Tin, wolfram, spices, hides, gum, gamboge, gutta percha, sticlac, pepper, ebony, cotton, sinews, tallow.

Siberia—Soya beans, timber, beancake, camel hair.

South Sea Islands-Vanilla beans, spices, copra, cocoanut oil.

Straits Settlements-Tin, rubber, coffee, copra, pepper, tapioca, spices, gutta percha, cacao, gambier, rattans, sago, nutmegs, canes, shells, preserved pineapple.

## **SWINERTON** & MUSGRAVE

(Established 1888)

640 Fort Street Victoria, B. C.

Estate and Financial Agents Notary Public

**Business and Residential** properties for sale. Correspondence promptly attended to.

Reference: Union Bank of Canada, or any Bank in Victoria. Cable Address: "Musmime," Victoria.

# Principal Oils and Their Uses

-	- I I I I I I I I I I I I I I I I I I I	one and		300
	ABREVIATIONS	Balm	Melissa Officinalis .8993	a. Dardon
B.—Barries	Flav.—Flavor; Flavo	Paell	Ocimum Basilioum:	s: Perfume
F.—Fruits	llum,—fluor; Fluo	ring Bassia	R9199	o: Perfumo
Fl.—Flowers	Lig.—Liguer	Bay	lilipo	
H.—Herbage	Med.—Medicino	Bayborry	Bay Oil -	
K.—Kornele	Porf.—Porfumery; P	Beculta fat. eji erfuming er tallew	Myristica blouhyba; 8.	
L.—Leaves	D.—Drying	Boschaut		f, s: Candles, mod. f. ad: Seen, Illum.
N.—Nuts	E.—Essential	Ben ' Bens	Meringa meringa; S91 Sesamo Oli	f, sd: Seap, Illum. f, nd: Arts
R.—Reets	F.—Fixed	Bergamot	Fruit Citrus Bergamia:	
8.—Seeds	Nd.—Nondrying	Diambuha dada ak	rind of F839 +	o: Perfume
W.—Weeds	8.—Selid at ordin	Ary temperaturee Birch	Becuiba Fat, etc.	
Aduļt.—Adultoran	t Sd.—Semidrying	Bitter-almend	Bitter Almends .1.05+	o: Porfume, candy.
Cook.—Cooking		B!. Mustard	·	med.
		Bomah-aut	Bomah Nuts	f: Cookery
	ANIMAL OILS	Beralo tallew Brazil-aut	Shorea, Hopea, etc.; F.	f. s: Seen, candles
Name Arotio-sparm	Source Sp. Gr. ( Doseling	Thief Uses	Brazil nets .91	f, ed: Arts
Blackfish	Globicophala Melas Fine Lu	bricant Cacae butter	Theebrema acae; S9597	1. 4:
Bettlenese	Desgling Oil	Cajuput Calamus	Melalenea an.: L8293	At Madialas
Butter Crampfish	Terpode (fish)	Calliceenah	Acorus calamus; R96-1.0 Kundah Oli	o: Perfums, liquer
Ced-liver	Liver of ood, etc9193 Medicine			f, d: Arts
Crecedile Decellag		dressing Camemile r Sporm Oil Camphor		
Dugong	Dugong .88 Sub. fer	Cod-liver Oli Camphorwood	Dryebalaneps Arematica .90	o: Arts, medicino o: Medicino
Egg	Hon's oggs .91 Seap ma	aking Cananga '	Canangium odoratum;	
Eulachon Lard (fat)	Candlefish .91 Sub. for	Cod-liver Dil Candionut	F9194 Kekune Oli	e: Portum)
Lard ell	By pressing lard .92 illum. I	ubricant Canalia-bark	Canolia winterana	e: Medioin)
Melon Monhaden	Molon of Cetaceans Lubrica. Monhaden .93 Seep, to		Carapa guianensis; S92 Caraway seeds .9092	f, s:
	adulte	rant Cardamen	CAPGEMON XAAGE .RR. QX	e: Pef., IIq., med. e: Medicino
Neat's-foot	Feet of cattle .91 Lubrical Beef fat. sto. Artificial		Carlina acaulis: R1.03+	e: Medieine
Olee Flichard	Beef fat, ste. Artificial Pilehard Arts	Cashew, eash:w-apple		o: Flaver
Pogy		Soap, lubricant Cassia	Cinnamomum cassia; H.	
Perpoise	Harber perpoise, etc. .9293 illum.	Currying. Caster	.1.04 + Ricinus communis: S.	o: Porfuma
Soal	Various Seals .9193 lubries	ant, etc.	.9397	f, ed: Med., arts
Shark	Liver of Sharks .8793 Currying A pure Cod-liver oil	; adult. Cedar	Juniporus virginiana; W9495	as Dard
Shere Sed	A pare Coa-liver on	Codar-leaf	Juniporus or Chamae-	o: Perf., seap
Sporm	Sperm whale .8788 Lubrical			o: Perfume
Straits Tailow (fat)	Inferior Cod-liver oil	Coder-mut Cederwood Cidrole		f, d: Medicine e: Arts
Tallow oll	By pressing tailow Like la	rd ell Colory	Gelery; S. & L8489	e: Medicine
Train	Marino animais, esp. Lubrica: whales Currying	it, Illum., etc. Champaca	Michella champaca; Fi.	D4
Tunny	Tunny Like wh		Gynecardia sp.; S. ·	e: Perfums f. s: Medicine
Walrus	Walrus9293	Chenopodium	Chenopodium anthol	
Whale	Whales, seals, etc., esp. right whale .9293    um.,	seap, lubricant Cherry	Prunus seretina; K.	o: Medicine f, nd: Flavor
Whale tallow	Stearin of whale oil	Cherry-bark	Prunus virginiana; B. 1.05	e: Flavor
Weel	Weel of shoop .88	Cherry-kernel Chinese tallew	Prunus corasus; K92 Sapium sobiferum; S.	f. nd: Flavor f. s:
		Chiness or China-		1, 4:
	MINERAL OILS	wood	Wood Oil Cinnamon bark 1.03	
Product		Usos Cinnamen Cinnamen-leaf		o: Mod., flavor o: Porfumo
Cymogene Rhisolene	0.58 (110°B.) 9°C. (32°F.) Refriger 0.60 (100°B.) 18°C. (65°F.) Anaesth	ent Citron	Citrus medica; Rind .8687	o: Perfume, flavor
	.6566 (81*-82*B.) 40*-70*C. Selvent;	carburetant Class	Citronella grass .8892	a: Perfuma
Gaselins	.6669 (82*-73*B.) 70*-90*O. Selvent; . nant	Tuel; Illum!- Cechiearia	Cacularia alsolutita '34.'A0	o: Flav., perf., med.
Naphtha	.6970 (78°-70°B.) 80°-110°C. Seivent;	fuel; illumi- Cocea butter Coceaut ell er butt	Cacae butter	
•	nant .7173 (67*-62*B.) 83*-120*C. Selvent;	Coours butter on all	Garcinia indica; S90	
Ligroina Banzine	.7375 (62*-57*B.) 120*-150*C. Seivent	Coffee-berry		f. 4:
		Cehuna Celza	Rape Oli	f, ad: f: Adulterant
	VEGETABLE OILS	Coondah	Kundah Oll-	Addition aut
Name	Source Approx. Sp. Gr. Nature:	Copaiba Chief Uses Copra butter or oil	Copaiva Cocenut Oli	At Madialac
Name African-palm	African eli paim: 895 f, s: 8	eap, Butter Coquite	Elasis Melaneseca; F.	o: Medicine
Ajewan	Ptychetus ceptica: 8.	Corlander	Coriandor soods .8790 Maizo Oil	1: Seep
Alispico	.9093 e: Med. Pimenta Oli	; thymol. Gorn Costus	Theodorea lappa .98	o: Medicias
Almond		Cettensoed		o: Porfumo
Anda Andireba	Joannesia princeps: S92 f: Med	jeine Coumu · Coundi	Op <del>nocarpu</del> s sp.; N. Kundah Oli	4. Illumber-A
Andropogen	Carapa Fat or Oli Andropogon sp88-1+ e: Porf	ume Crab, Crab-weed	Carapa OII	f: Illuminant
Angelica	Angeliea Archangelloa	Cress-soed	Lepidium sativum; 8924	
Angostura	Angestura bark .9396 o: liqui		Cubebs .9193	f, ed: Arts
Aniso, Anisoed	Pimpinella anisum	Cueumber	Cucumber seeds	o: Medicine
	and illicium	Culliaban	Cinnamomum ouillahan F. 1.05	f, d: Medicine
Apricot	vorum; F9899 e: Med Apriost kernels .92 f: Med	: Adult. of Al. Cumin	Cumin Soods	•:
•	ma	nd Oil Cureas Cuscus	Jatropha euroas; S92	o: M <del>edicine</del>
Arachis	Peanut—Oil Arguina Liderexylen; F. f. nd:		Vetiver Oli Cupressus sempervirens;	f. nd: Med., Illum.
Argan Argomono	Argemeno sp.: S. 1, d: /	Arts, med.		
Artist's	Kekuna Oli Asafetida .9899 a:	Daggett Dail	Municipal and the second	o: Medicine
Asafetida Asarum	Asarum sp1.06 e: Peri	ums Dika	Myristica sobifora; 8, irvingia bartori; 8, .22	f, s: Soap. Illum.
,	•	Dili	Dill; S90-,92	

Dile	Demba Oli		e: Perf., Med.	Pa:m	Species of Paim	f. e: Candles, seap
Demba	Calephylium inophylium ;	8.		Palmaresa	Ol O OH :	eintments, etc.
Ederes	Landles assistants of		f: Med., Illum.	Paim-nut	Ginger-Grass Oli Arlean-Paim Oli	
Erigoron Estragon	Leptilen canadense .86- Tarragen Oli		e: Modicino	Parsley	Pareley 1.05-1.10	e: Perfume
Eucalyptus	Eucalyptus sp. L85-		·	Patcheuil	Pogostemon patcheuii	o: Perfume
			s: Medicine	Peanut	Peanuts .92	f. nd: Feed, seam
Finnsl	Fennol; 896-			Pennyreyal Peppermint		e: inscotifuge
Fir, fir-week Fir-seed			e: Perf., Med. e: Medicine	reppermint	Peppermint, horsemint	e: Flavor. Med.
Ficabana	Erigoren Oli		f, d: Arts	Petit-grain	Orange tree; H8990	e: Perfume
Florenc) Fu wa Butter	Mar butance			Phulwara butter Pimenta, or Pimento	Fulwa butter Pimenta, pimenta; B. 1.04	
I D WE DULLEY	Illipo butyraesa			Pino-needle	Conifers; H8692	o: Piaver, mad. a: Medicina
Galam Butter	Shea Butter		f, s: Foor, II:um.	Pincy tallow or oli Picula	Malabar tallow	
Galanpai		.92		Pistachie-aut	Caryocar brasiliense; F. Pistachie nuts .92	f. s: Food f. nd: Illuminant
Gallipoli			o: Modicine	Plum, Plum-kernal	Pium kernels .92	f, nd: fliuminant
Garile Gaultheria	Garilo i Wintergreen oli	.05	e: Flavor, med.	Peon, Peona, Peonay or Peonseed	Demba Oil	
Geranium			o. Fieror, meu.	Poondy	Myristica maiabarica S.	f, s: Medicina
German-camemile	0			Poonga	Kurung Oll	<u>-</u>
Gorman Sesamo Ginger	Campiles Oil Ginger .87-	.RQ		Poppy-seed Pulza	Opium poppy; 89293 Curcas Oli	f, d: Food, seap
Ginger-grass	Gingor grass	.89	e: Flavor, med.	Pumpkin-seed		f. sd: Cook, lijum.
Gingiii Goa buttar	Socamo Oli Cocum butter		e: Perfume			
		.94		Rangeen	An impure clive oil	
Grass	Citronella Oli		f, sd: Food, Illum.	Rape, rape-seeds	Raposesds .91	Lubricant
Groundaut	Peanut Oli			Rhedium Roosa, ruse	Rosewood oli Citronalia Oli	f. sd: Illum., lubricant
Manel (nut)	Manalaut-		4 .4. 54	Rese		o: Perfume
Hazel (nut) Homp	Hazelauts .92- Homp; Fl.	.93 .93	f, sd: Perf., med. o:	Rose-geranium		
Hemp (seed)	Homp; S.	.93	f, d: Arts	Recemany Reseweed	Rosemary .9092 Lignum rhedium .9091	o: Perfume
Нер	Hope .85-	.91	s: Flavor	Rus	Ruta gravoelens .8384	o: Porfumo o: Porfumo, mod.
						v. FSTUMO, 開9G.
illips Iau II	lilipe latifolia; 8.		f, s: Food, Illum. f. s: Food, Illum.	Safflewer	Carthamus tineterius .93	4 4 100
ii upi iva	Achilles meschats		t, 8: Food, Illum. e: Perfume	Sage	Sage; L9293	f, d: ilium. e: Med., perf.
				Sandalwood	orucrium sibum; W.	
Jasmin	Jasmimum grandiflorum;		o: Perfume	Sassafras	.9798 Sassafras; W. er R. 1.08	o: Porfume, mad. s: Secuting soap
	FI. I	.01		Savin	Juniperus sabina; H.	
Japanoso-wood Jatropha	Jatropha: 8.	.91	f. ed: Purgetive	Sawarri fat	.9193 Caryocar tomentosum ,90	o: Medielne
Jonquil	Jonquii-Fi.	.87	o: Perfume	Socame		f. s: Food f. sd: Food, Illum.,
Juniper	Juniper; B. Raphia vinifera; F.		s: Med., flavor, gin.	. Shea butter	BUTY PER BERNIER PARKIT;	
Jupati	napnia vinitera; F.		f: Seap	Simboles	892 Murraya Koenigii; 8.	
Kanari	Java almond; S.		f: Cooking, Illum.	Siri	Ginger grass ell	f. 3: Food, Illum. f: Med., arts
Kapek		.92	f. sd:	Siringa Seja-baan	Hoven brasiliensis; 8. Sey beans .92	
Kona	Calophyllum tomento- sum: 8.		f: illuminant	Souari fat	Sewarri fat	f: Seep, arts
Keku <b>me</b>	Candlenut; S.	925	f, d: Arts, med., Illum.	Spanish walnut	Kekune Oll	f. sd: Arts
Kikuol	Toothbrush tree; 8.		f, s: Arts	Spearmint Spike	Montha sp., esp. M. Viridue Lavandula spica .92	o: Perfume
Krumheltz Kundab	Knoe pine Carapa precera; S.		e: Medicine	Spikenard		o: Lacquer, porf. o: Perfume
Kuruag	Galedupa Indica; 8.		f: Med., [lium.	Sunflewer Sweet	Sunflewer; S92	f. d: Seap, varnish
	1			Ower.	Olive oil	
Laurel Lavender	Laurus nobilis Lavender .88-	.90	o: Perfume			
Lodum	Ledum palustro .92-	.96	e: Arts	Tallooona Tambor	Kundah Oli Omphalea eleifera 8.	. •
Lomon	Lemon psei Andropogen eitratus	.86	o: Flavor, porfuma	Tansy	Tanay .9395	f: Purgative e: Scenting
Lemon-grass Lime	Limes .88-	.80	e: Perfume e: Flaver	Tarragon	Artemisia dracumeulus	<del>-</del>
Linseed	Flaxseed	.93	f, d: Arts, med.	Tea, tea-seed	.8996 Theajapenica, T. sasan-	A. LIGAR.
					qua; 892	
Macassar	Mace east	.02	e: Perfume	Thuja Thyma	Herbago arbervitae .92	
Mace Madia	Madia sative; S.	.93	e: Perfume f, d: Food	1 117 ma	Thymus, vulgaris, etc9094	Med., microscopy
Mafurra tallow	Mafurra tree; 8.		f. s: Feed	Til, teel	Sceame OII	
Mahwa butter Malze	ilipo Maize; S.	.92	f, sd: Feed, adult.	Tebasse-seed Tree	Tebacce; S92 Tung ell	f, d: Varnish
Malabar tailow	Vatoria indica; S.	.92	f. s: Food, candles	Tucum	Fruit pulp of Tueum	
Marjoram Marmotto	Marjeram .89- Apricet; K.	.91	e: Perfume f: Feed	Tung	paim; F. Tung tree	f: Arts
marmotto Marsh-tea	Ledum Oli		r: <b>r90g</b>	Turkish geranium	Ginger grass ell	f, d: Varnish, paints
M assoy		^-		Turpontine		
Matice Mehudeo	Matice .93-1 Honna plant		e: Medicine e: Perfume			!
Melissa	Balm Oil			Uouhuba fat	Bocuiba fat	
Mineuii Moodoose	Melaleuca species Dhak tree: S.		e: Med., port. f: Medicina	Vegur	Agailechum	e: Perfume
Moodooga Mot) -	Variety of carapa oil		i: medicins			
Mowrah-seed	Mahwa tree; S.	.92	f, s: Food	Valorian	Valorian root .9399	e: Med., perfume
Mugwort Mustard	Artemisia vulgaris	.71	e: Perfums	Verbena	Verbena officinalis, etc8995	
Myrtie	Myrtus communis .89-	.92	e: Perf. med.	Vetiver, Vetivert	Andrepogon squarresus 1.02	o: Perfume
Manall	Orango flowers .87-	90				55 E
Nereli Niser		.93	o: Perfumo f. d: Food, Illum.	Walnut	Walnuts .93	f. d: Paint, varnish
Nutmeg	Nutmegs .87-	.92	e: Perfums	Wold-seed Wild-ginger		
Nutmeg Eutter	Nutmags .95-	.99	f, s: Pomades	Wild-ginger Wintergreen	Asarwm canadenss .9396 Gaulthoria procumhens 1.18	a: Perluma
Odal	Sarcestigma kisinii: S.		4. 14.4 111	Wood		₹•
Oloesa	Sarcestigma Kisinii; S. Eucalyptus sp.		f: Mod., Illum. o: Porfums	Wermseed	Artemisia Maritima; Fl. bude .93	
Olive	Ripo Olives	.92	f. nd: Food, etc.	Wermweed	Artemisia abointhium	o: Medicine
Onion Orango	Onions I	.04	e: Flaver, med.			o: Modicine
Origanum						
Orris Otaba fat or butter	Orris Reet		e: Porfume	Yallah	Illipo	
Ouabe	Myristica etoba Omphaica triandra; S.		f, s: f: Lubricant	Yamadou Ylang-ylang	Dall ell	1
				· issa.lissa.	Cananga oli	· ·

# Principal Nuts and Their Uses

Acorn. The fruit of the oak, usually seated in a hard woody capsule. Acorns, while rich in protein, fat and starches, contain in addition disagreeable elements, like berberine, or tannin in excess.

Almond. The kernel of the fruit of the Almond tree, native in Southern Europe. The various kinds, as bitter, sweet, thin-shelled, thick-shelled and Jordan, have developed from the single species. Bitter almonds grow mostly in the Mediterranean regions, and are used in the manufacture of flavoring extracts. The oil produced is similar to prussic acid and very dangerous to use. Sweet almonds are cultivated in various parts of Europe and California, and used extensively in cookery and confectionery. This variety also yields an oil, and almond paste is made from the sweet almonds.

Areca Nut. (Bethel Nut.)

Australian Nut. The large nut of an Australian proteaceous tree, cultivated in southern California. The Australian nut has a flavor like the almond or filbert nut.

Bancoul Nut. (Candle Nut.)

Barcelona Nut. (Hazel Nut.)

Beech Nut. The small sweet-flavored nut of the Beech Tree. It is triangular and enclosed in a bur. Flavor similar to that of a chestnut. The European Beechnut yields a valuable oil.

Bean Tree Nut. The chestnut-like seeds of the Bean tree. The seeds when roasted are used as a food by the natives of Australia. They are also called Moreton Bay Chestnuts.

Betel Nut. (Areca Nut.) The nutlike seed of the Betel Palm, used as a masticatory by the natives in the tropics. The Betel Nut possesses strong stimulating properties. It contains a large amount of tannin from which coloring matter is made. The Betel Nut grows freely in all eastern islands. In powdered form used as tooth paste.

Bladder Nut. The fruit of a shrub common in eastern and northern United States. Seeds are beadlike and used only as ornaments.

Brazil Nut. (Also called Nigger-toe, Cream-nut, Paranut). The seeds of certain very large uncultivated trees common to great areas of river bottom land in Northern Brazil. The nuts are contained in a spherical or pear-shaped capsule, having a hard woody outer wall, within which are encased from 18 to 24 of the nuts. The Brazil nut is rich in oil.

Buffalo Nuts. The oily drupaceous fruit of the Rabbit Wood, an American shrub; also called Elk Nut and Oil Nut.

Butter Nut. The edible sweet flavored nut of an American Tree of the Walnut family, so called from the oil in it.

Calabash Nutmeg. The fruit of a tropical shrub, about the size of an orange, containing many aromatic seeds, used like nutmegs.

Candle Nut. The name under which an oily seed is imported into this country, either broken or in the shell. The French call them Bancoul Nuts, and in the Pacific Islands they are known as Kukui. They are much relished and have the taste of English Walnuts. The oil has many uses.

Cashew Nut. The fruit of a tropical American tree akin to the Sumac; it is used as a food after the caustic oil has been expelled from the shell by roasting. The kernels are firm, sweet and very agreeable. The pressed kernels yield a sweet oil of excellent quality. The outer shell is smooth and ivory like in appearance.

Cedar Nut. The seed of the Swiss Pine; also called Cambra Nut; used for food in Siberia.

Cassia Nut. (See Cashew Nut.)

Chestnut. The edible nut of a forest tree; reddish brown in color, having thin papery shells. The nuts are

contained in stiff brown burs which are covered with sharp spines. They are found in all sections of the north temperate zone.

Cob-Nut. The filbert-like fruit of any of several cultivated varieties of Hazel.

Cocoanut. The fruit of the Cocoa or Cocoa Palm; commercially very valuable in the tropics. The thick meat of the Cocoanut is used for food. The milky fluid in the ripe fruit furnishes a refreshing drink; copra and cocoanut oil, both valuable exports, are obtained from the cocoanut.

Corozo Nut. The seeds of the Ivory Palm, a tropical American tree.

Coquillo Nut. Seeds of a South American Palm, of a rich brown color three or four inches long, oval, and of a very hard texture; used as a substitute for ivory in the manufacture of door knobs, etc.

Coquito Nut. The edible seed of a Chile Palm, used for soap manufacture.

Earth Nut. Peanuts, or any of various tubers or subterranean pods.

Elk Nut. (Buffalo Nut.)

Filbert. An oval nut with a kernel that has a mild farinaceous oily taste, agreeable to the palate.

Gall Nuts. Excrescences on the oak, sometimes called Oak-gall. Gall nuts contain gallotannic acid, used chiefly in combination with iron in the manufacture of high-grade ink.

Ground Nut. Various tubers native to the eastern part of the United States, which have a rich nutty flavor when properly prepared.

Hazel Nut. The nut of the Hazel, containing a kernel with a mild farinaceous taste.

Hickory Nut. The nut or fruit of the Hickory Tree, indigenous to nearly every section of the United States, the Shagbark being considered commercially the most valuable. The shells vary in thickness from extreme paperlike thickness to extreme thickness and hardness. The kernels are formed in two distinct halves separated by a partition.

Ivory Nuts. The nutlike seed of a South American Palm. Is as large as a hen's egg and contains a very hard endosperm, which under the name of vegetable ivory is used for turning and carving, as for buttons, etc, etc.

Kola Nut. The brown bitter nut of a tree native to Africa, cultivated in the West Indies and Brazil, containing caffeinne and some thine. On the Congo the nuts are called Makasso nuts. In some localities the ground nut is used as a substitute for coffee.

Kukui Nut. (Candle Nut.)

Li Chee (or Litchi), (Chinese-nut; Dawa-nut). The fruit of a tree native to China. It has a somewhat agreeably flavored pulp, containing a single seed, and enclosed loosely in a rough papery shell. It is oftentimes made into preserves. It has been cultivated in China for centuries and is a familiar article of food especially at the season of the Chinese New Year. References to the Lichi occur in Chinese writings produced long before the beginning of the Christian era.

Myrobalans. The seed of the prune-like fruit of an East Indian palm tree, much resembling a nutmeg. The seed possesses an almond-like flavor. Oil extracted therefrom is used as a hair restorer, the nut is used in calico printing, tanning and ink manufacture.

Nutrneg. The seed of a tree native to the Molucca Islands, but cultivated on a large scale in the East and West Indies and Brazil. The Nutrneg is strongly aromatic and largely used as a spice.

Oil Nut. (Buffalo Nut.)

Peanut. The oblong rich nutlike seed of a tropical vine, marketed in the pod or when divested of its thick



papery husk; eaten when roasted, and also made into peanut butter; its chief commercial use is in the manufacture of peanut oil.

Pecan Nut. A species of hickory of the South Central United States; a smooth, oblong thin-shelled nut. It has a sweet, richly flavored kernel. Texas and Louisiana produce these nuts in large quantities.

Pine Nut. The edible seed of any of several pines, as the Zeoza Pine, the Stone Pine, etc.

Pistachio Nut. The nut of a Syrian tree, properly the stone of the fruit. Pistachio nuts are much eaten as a dainty; the kernels have a distinct greenish color throughout, have a mild agreeable flavor. They are also used as a flavoring substance in confectionery

Physic Nut. The edible seed of a small tropical American tree; also called Tuba Nuts. The seed contains a drastic oil used in medicine and for bleaching clothes; also for illuminating purposes.

Quandong Nuts. The spherical yellowish seeds of an Australian tree, about the size of marbles, edible, and used as a preserve.

Quebracho or Quiebrahacho Nuts. The seed of the fruit of several tropical American trees.

Queensland Nut. The seed of the fruit of an Australian evergreen tree. The fruit is about an inch in diameter and contains a single round edible seed. There are a few species in California.

Sapucaia Nut. The oily edible seed of the Sapucaia, especially of several Brazilian species. They are used for food and furnish an oil.

Souari Nuts. The large edible nutlike seed of any South American tree of the genus Caryocan. They yield a bland oil used in cookery.

Spanish Nut. A variety of hazel nut.

Tagua Nuts. The fruit of the Ivory Palm.

Walnut. The Celtic or foreign nut, or the nut of any tree of the genus Juglans, especially the species commonly distinguished in the United States as the English Walnut.

### OIL DOCKS

### Imperial Oil Company

Head Office Vancouver, B. C.

Port Moody, B. C.: Dock, 200 feet; approach, 700 feet; depth of water, 33 feet at low water; docking capacity, 2 boats from 25 to 400 feet. Unlimited capacity for tow boats and boats of light draft. Oil loading facilities excellent.

Vancouver, B. C .: Grand Trunk Pacific Dock. Fuel oil supplied in or out of bond. Loading facilities pipe line 6-inch connections, 1200 barrels per hour.

Prince Rupert, B. C.: Dock 100 feet; depth of water 40 feet at low water, loading facilities for gasoline, distillate and fuel oil pipe line on dock.

Victoria, B. C.: Dock 100 feet. Depth of water at low tide, 33 feet. Gasoline and fuel oil pipe line on dock.

### Standard Oil Co.

Head Office, San Francisco.
Can furnish Calol Fuel Oil suitable for Diesel or semi-Diesel engines at the docks of the Standard Oil Company at Richmond, Point Wells, Seattle, Wellbridge, San Pedro, and Honolulu; and by barge at Seattle, San Francisco, and San Pedro.
Can furnish fuel oil delivered by barge alongside steamship at the waterfront, San Francisco, Oakland and San Pedro, California, and Seattle, Washington.
Can also furnish fuel oil at the docks of the Standard Oil Company at Oakland, Eureka, Astoria, Seattle, Port Townsend Bellingham, Ketchikan, Tacoma. Aber-

Port Townsend Bellingham, Ketchikan, Tacoma, Aberdeen, Olympia, and Honolulu

Can furnish lubricants, gasoline and distillate at: Alaska: Juneau, Petersburg, Ketchikan, Wrangell, Sitka, Nome, Waterfall, Skagway.

Oregon: Astoria, The Dalles, Bandon, Tillamook, Hood River, Yaquina, Portland, Coquille, Klamath Falls, Marshfield.

Hawaii: Honolulu, Kahului, Hilo, Port Allen,

Washington: Aberdeen, Blaine, Kanaka Bay, Potlatch, Shelton, Gig Harbor, Anacortes, Bremerton, Olympia, Poulsbo, South Bend, Ballard, Everett, Point Wells, Richardson, Tacoma, Bellingham, Friday Harbor, Port Townsend, Seattle, Vancouver, Houghton, Kalama, Lake Washington, Mt. Vernon, Nellita, Port Angeles, Port Orchard, Winslow.

California: Eureka, Monterey, Petaluma, Sacramento, San Rafael, Stockton, Ventura, Martinez, Napa, Pittsburg Landing, San Diego, Santa Barbara, Sausalito, Long Beach, Oakland, Red Bluff, San Francisco, Santa Cruz, Suisun, Maryville, Oceanside, Rio Vista, San Pedro, Santa Monica, Vallejo, Walnut Grove, San Luis Obispo, Princeton, Knight's Landing, Jersey Island, Half Moon Bay, Grines, Fort Bragg, Colusa.

### Union Oil Company Head Office Los Angeles

Vessels can procure bunker oil from the following stations of the Union Oil Company.

Vancouver, B. C.; Seattle, Wash.; Portland, Ore.; Astoria, Ore.; San Francisco, Cal.; Stockton, Cal.; Port San Luis, Cal.; San Pedro, Cal.; San Diego, Cal.; Balboa, Canal Zone; Tatal, Chile, S. A.; Honolulu, T. H.

### FOREIGN MEASURES

The "Quarter" in England consists of-	Lbs.
American Atlantic Coast business in all U. K. markets	480
English and Scotch barley in all United Kingdom markets	448
Russian barley in London	400 304
Prince Edward's Island oats in Liverpool and London	320
English and Scotch oats in all United Kingdom	
markets	336 500
English home-grown wheat in all United Kingdom markets	504
Russian wheat in London	492
Other measures in different countries are-	Bu.
One hundred kilos wheat equal	3.67 3.93
One hundred kilos rye equal	3.93
One hundred kilos oats equal	6.87 4.58
One hectilitre wheat equals	2.83 2.05
One fanega, Argentina, wheat equals	1.59 19.17
One cahiz, Argentina, wheat equals One candy, Bombay, wheat equals	9.33
One candy, Madras, wheat equals  One candy, Myrose, wheat equals	8.32 9.33
One chetwerk, Russian, wheat equals One candy, Bengal, wheat equals	5.92 9.22
One pcod, Russian, wheat equals	.60

### LIQUID MEASURE

The United States gallon contains 231 cubic inches or The United States gailon contains 251 cubic inches of .134 cubic feet, or one cubic foot contains 7.481 gallons. The British Imperial gallon, both liquid and dry, contains 277.27 cubic inches or .160 cubic feet, and is equivalent to the volume of 10 pounds of pure water at 62 degrees Fahrenheit. To reduce British to U. S. liquid gallons, multiply by 1.2. To convert U. S. into British gallons, divide by 1.2.

# Countries and States on the Pacific

### RUSSIA—SIBERIA

Steamer Routes

Photographs by courtesy of the Seattle Chamber of Commerce

Within the confines of Vladivostok is comprised one of the finest harbors in the world. It is land-locked on all sides, has a clear and open entrance and one day will claim its cwn position amongst the world's premier Regular local services are offered by the steamers of the Osaka Shosen Kaisha, Nippon Yusen Kaisha and the Russian Volunteer Fleet to and from ports in Japan. The steamers of the Osaka Shosen Kaisha and the Russian Volunteer Fleet run regularly to and from Tsuruga on the west coast of Japan, affording through that part of direct and rapid connection with all cities in the Japanese Empire. The Russian Volunteer Fleet sends a special mail steamer every week to Shanghai, via Nagasaki, and a regular cargo steamer every week to eastern Japanese ports through the Inland Sea of Japan. The Nippon Yusen Kaisha maintains constant communication between Vladivostok and Chosen ports, this line being extended through Chosen to the Eastern ports of Japan, no European passengers being carried. In addition to the Shanghai and Tsuruga services, the Russian Volunteer Fleet maintains regular communication with ports in Kamchatka and the extensive Russian fishing grounds to the north of Vladivostok. Ocean services are maintained from Vladivostok to the Black Sea by steamers of the

Russian Volunteer Fleet, but the war caused this service to be suspended. These steamers also run to Victoria and Vancouver, but not with any great regularity. The mail service via Tsuruga and Shanghai already referred to affords passengers every facility for reaching other parts of the globe, as also does the Trans-Siberian R. R., Vladivostok being the Siberian terminus of this line.

United States Consulates at: Moskow, Odessa, Petrograd, Helsingfors (Finland), Riga, Libau, Tiflis, Vladivostok, Warsaw.

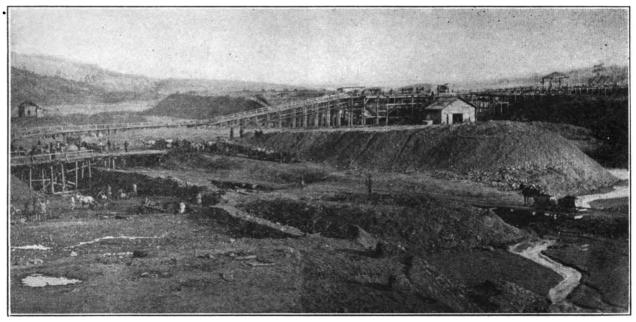
### BY A. C. BLACKALL

In dealing with Siberia and the wonderful prospects and opportunities she presents for practically unlimited trade with these shores, chiefly between American Pacific Coast ports and Vladivostok, I have used many sources for compiling my data. While it is my intention to touch upon Siberia, her mines, fishing, railways, markets, timber, general resources and developments, special attention will be paid to Vladivostok, it being the chief port for both imports and exports.

In order to fully appreciate what Siberia is today it will be necessary to go back a few years and realize her then position and for purposes of comparison I shall refer to reports from the earliest days of this century. Since the greater always contains the less, in order to visualize Siberia as a part, it may be en-



City of Nijni-Novgared



Placer Mining, Showing Double-Barreled Mining Outfit

lightening to give a very brief resume of the enormous import and export trade figures of Russia as a whole.

### Trade in 1900

In 1900 Russia's total exports amounted to 716.418,-000 roubles and her imports to 626,375,000 roubles. Germany ranking as her best customer on both sides of the ledger and Great Britain coming second. By 1913 her exports had risen to 1,520,135,000 roubles and her imports to 1,374,033,000 roubles, Germany taking nearly 32 per cent of her exports and supplying over 521/2 per cent of her imports, having risen from 26 per cent of exports and 34 per cent of imports, while Great Britain's percentages fell from 20 per cent to 18 per cent in exports and from 20 per cent to 14 per cent in imports. In 1900 the total American imports from Russia were \$7,246,980 and in 1913 \$29,320,157, while exports for the same year were \$10,488,419 and \$26,-465,214 respectively.

During the first three years of the war the total exports from the United States approximated \$1,000,-000,000, or nearly double the figures of the fifty years preceding this period. This enormous increase was almost entirely due to the shipments of munitions, railway material, barbed wire, machinery, automobiles and metals, copper being by far the largest of these. During 1915 \$23.000,000 worth of American imports went through Vladivostok but rose to \$314,000,000.00 in 1916.

The war practically opened up direct communication with Vladivostok and that this route will be maintained after peace is formally declared goes without saying.

The Recueil Consulaire of Brussels late in 1899 issued a report on Vladivostck from which the following items are taken:

### Description of Vladivostok.

"The port of Vladivostok, most commodious and picturesque, is situated on the peninsula Mouravieff Amoursky, in a beautiful bay, called from its shape 'Horn of Gold.' This bay is sheltered from the winds, by high mountains, and hundreds of ships can be received at a time in its deep waters. The location of the town is fine, the ground upon which it is built being terraced back upon the mountain sides, which adds to its apparent size. In reality, there are only a couple of thousand buildings, three-fourths of which are wood. Vladivostok is situated 21/2 degrees farther south than Venice, and only three-fourths of a degree

north of Florence or Nice; yet its climate, like that Vasa or Archangel, is subject to extremes of heat and cold. In summer the heat is at times almost tropical, accompanied by moisture. The fogs and the south-west winds begin in May and last until the end of July. The winter, commencing in December, lasts until April or May. The air is then very dry, and the prevailing winds are from the northwest.

"The environs of the town are cut in every direction by superb military roads joining the different forts and batteries. Besides the 20,000 military, the town has about 25,000 inhabitants, of whom 10,000 are European and 15,000 Chinese, merchants and workmen. The Chinese population fluctuates, thousands of coolies coming for the season and returning to China via Che-foo at the end of autumn. The system of sewers, waterworks, street cleaning and lighting is of the most primitive character. The town has two banks (the Government and the Russo-Chinese), two theatres (one of stone), two libraries, large military and public hospitals. four clubs, and five or six hotels.

### Permanent Connection With the Sea.

"The powerful ice-breaking boats, belonging to the Government, maintain permanent communication between Vladivostok and the sea; so that one may say that navigation is open all the year. It is, however, limited in winter to boats of the volunteer fleet, one boat per month running. The greater part of eastern Siberia and the northwestern part of Manchuria will be for some years without railways, and Vladivostok will remain their outlet.

"The value of the commerce of importation of Vladi-

vostok is estimated at about \$14,475,000. Grain, live animals and tobacco are imported by land from Manchuria and Korea (Chosen) to the value of \$772.000 annually. The yearly exports, which include manually articles are specific to the value of \$772.000 annually. factured articles, shoes, skins and colonial products amounting to \$1,544,000.

"Thirty-one miles from Vladivostok and nine miles from the railway of Oussouri is situated the coal mine of Nadeshdinskaja, about six square miles in extent. The coal is of good quality. The navy expects to use it. Nearer Vladivostok, only 2½ miles from the railway, are found beds of soft coal, nearly eight square miles in extent. These mines contain different kinds of good coal, superior in quality to the Japanese coal. There have also been found deposits of iron, argentiferagus, lead, copper and gold.



"There are four other towns in this region-Nicolsk, Khabarovsk, Blagoveshensk and the port of Nicho-

laevsk.
"The little town of Nicolsk situated about 62 miles from Vladivostok in the line of the Oussouri railway. will be the starting point for the Eastern Chinese railway. It has more than 4,000 inhabitants and a very considerable commerce with Manchuria. Khabarovsk, 15,000 inhabitants, is the seat of government of the country. It is located at the terminus of the Oussouri railway and at the junction of the Amur and Oussouri."

### Wonderful Results from Farming

A member of the Russian section, M. Emile du Marais, of the French Bureau of Foreign Commerce, in 1900 stated "that 200,000 farmers arrive in Siberia annually, the Government providing them with free transport and giving each family the free use of 15 hectars (37½ acres) of land for a stated time. population is now 8,000,000. Making a compute Making a computation upon the basis of the population of Russia in Europe, Siberia is capable of sustaining a population of

Siberia is capable of sustaining a population of 80,000,000.

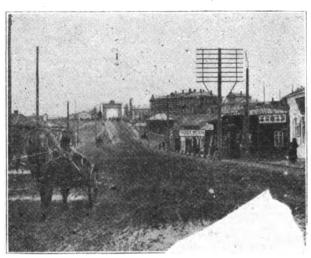
"The annual production of cereals in Siberia is 20,-000,000 metric quintals (2,000,000 tons), of which 6,000,000 to 8,000,000 quintals (600,000 to 800,000 tons) are exported. The country can produce 10,000,000 tons annually, from 4,000,000 to 5,000,000 tons of which are subject to exportation. Siberia now exports butter to 80,000,000 francs (\$16,000,000) worth of butter, wool, leather, dried and preserved meat; and fish and tallow may figure conspicuously in her efforts in the near

### Forest Preservation.

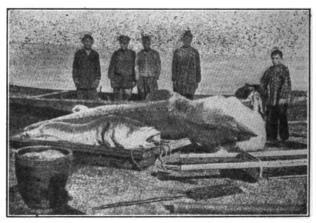
"A movement is now in progress in the direction of forest preservation, the destruction having caused a scarcity of furs, blue fox and zibelines. Siberia produces one-tenth of the world's yield of gold, and but few of the mines have been worked on account of the climate. The immense coal deposits have hardly been touched. One mine with six beds contains as much coal as all the deposits in England. The lack of transportation facilities alone had prevented it from being worked. The Trans-Siberian Railway, from an economic and political standpoint, is the greatest work of this century. It now touches the Amur, and in three years it will reach Port Arthur, making the distance but thir-

teen or fourteen days from Moscow to Peking.

"There is annually an excess of 1,500,000 births over deaths in Russia, and Siberia is an outlet for this over-flow. The black lands of Siberia form an area of no less than 50,000,000 hectars (123,500,000 acres), but high freight rates are an obstacle to the arrival of their cereal products in France."



Verchnendiusk, Siberia-Copy



Amur River Sturges

### Mining.

In 1900 Baron de Batz published a book from which the following extracts are taken:

"In the mining districts of Tomsk, Tobolsk, Arkmolinsk, Semipalatinsk and Semirechensk gold is to be met with in the tributaries of the Ob. Now diggings are confined to the affluents of Lake Zaissan and the Narim and Black Irkutsk rivers and to the affluents of Lake Esseh-Kone and Balikash and the Kopalsk. In the Arkmolinsk operations are centered in the locality of Kotchetavski.

"In the Maritime Province there is one group of concessions in the basin of the Amur and another in the island of Askold. Here the sea bed, which consists of auriferous sand, is worked in a perfunctory way. Among the affluents of the Amur, important from the point of view of gold production, the River Amgoun and the Tumen must be noticed, as well as the Semi, the Nemilen, et cetera.

"The gold workings of the Amur constitute four groups, distributed for the most part over the left tributaries of the Amur river.

"In West Transbaikalia diggings are confined to the affluents of the Chikoi, a tributary of the Selenga, which empties into the Baikal, a tributary of the Yenisei.

"The Lena mining district comprises the region traversed by the lesser hills of the Yabloni mountains.

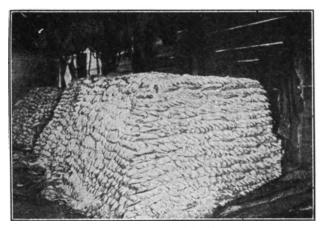
"The virgin forest zone in Siberia, which abounds in bogs and swamps, impenetrable except in winter, when the ground is frozen, has a series of river and torrent systems, which may for purposes of general classifica-tion be called (a) the Podkamennaya-Toungounska system, (b) the Great Pit system, and (c) the system of the Yenisei and its tributaries. The Great Pit forms the boundary between the north and south districts.

"In the Lena district the gravel is very poor and difficult to work. The district of Baruginsk is the poorest locality within this jurisdiction, although at one time it occupied the foremost position in Siberia as a gold-producing district.

"In the district of the Altais gold is worked on tributaries of the Ob. The placers on the left bank of the Torn are worked by the companies of Petrograd. The right bank is free, and diggings are to be found on the River Tom, Alkan Choulichman, Upper Katoun Bonshtarma, et cetera.

"From this summary it will be seen that the auriferous area extends over the slope of the mountain ridge which rising from the steppes of Turkestan and dying away as it skirts the Sea of Okhotsk, traverses obliquely the Asiatic continent from southwest to northeast. From the meridian of Tobolsk to the Pacific the range is about 4,300 miles long, with an average breadth of nearly 400 miles and an area of over 1,600,000 square miles. This country has only been superficially prospected, because roads are lacking and it is impossible to penetrate these primeval Siberian forests in summer;





18,000 Silver Salmon at Nikelalofsk, Amur

and to prospect in winter, when every outcrop and surface indication is buried beneath the snow, it is not an inviting or profitable undertaking.

"The work of Government exploration in the eastern portion has not proceeded beyond the sixty-second degree of latitude, although the existence of a very rich auriferous vein is known in the mountains between the Lena and Ayan.

### The Genesis of Siberian Placers.

"The Siberian placers are situated on the north and northeast of the great mountainous plateau described.

"This vast plain, intersected by important rivers—the Wenga, Angara, Yenisei (nearly 3,000 miles long), the Ob (over 2,600 miles), the Lena (more than 2,000 miles), and the Amur (2,600 miles)—still shows traces of great glacial activity. The origin of the Siberian placers, judging from researches made in other parts of the world—the United States, Australia, Europe—may be accounted for as follows:

"The Silurian or Devonian mud, on account of the auriferous pyrites it contains, most competent geologists agree in regarding as the almost universal source of gold. This was upturned at the period of the formation of the Asiatic ridge, and at the same time was fissured and broken. The fissures, filled with quartz and pyrites torn from the schist by the action of the waters, became the veins already found. Subsequently the powerful action of the glacial period gave rise to the placers which are now being worked.

"If this theory of the formation of auriferous alluvia,

"If this theory of the formation of auriferous alluvia, which has been verified in the other great gold-producing countries, proves true of Siberia, also then it is to the south of the localities at present worked that a systematic search for the primitive strata ought to be carried out

be carried out.

"It is already known that the Altais contain veins of lead, silver and copper; numerous specimens of all kinds of minerals have been brought from that region by hunters and foresters. It is in these hills, with their westerly continuations, and in the mountainous mass that strikes out from Manchuria in a northwesterly direction that the wealth of Siberia must be sought.

direction that the wealth of Siberia must be sought.

"The chain of the Khingan, 'Mountain of Gcld,' is said to be rich in minerals, and it doubtless is from these hills and their spurs that the gold in the placers of the Ussuri and the Amur (lower portion) was brought.

"The same reasoning holds good for the hills bordering on the Sea of Okhotsk.

"In addition to native gold, frequently found in nuggets, iron pyrites, often in the form of mispickel, and all the products of its decomposition, such as magnetic oxide, limonite, et cetera, are met with in the Siberian gravels."

"Copper is found, sometimes native, sometimes in the form of copper pyrites; lead has been discovered as sulphate, carbonate, phosphate or sulphuret.

"Native bismuth has been found in the valley of the North Yenisei and in certain valleys of the Altai.

"Among hard stones, garnets, rutile, tourmaline, zircon, peroxide of tin, et cetera, are found.

"The organic remains are most generally those of the mammoth. In 1840 it was calculated that more than two thousand of these animals were found; some with portions of their bodies still soft were discovered in the frozen clays of the far north. The woolly rhinoceros (Rhinoceros tichorinus) is also frequently met with.

"The state of preservation of these mammoths—animals which required abundant vegetation—indicates in a striking fashion the rapidity with which the Glacial period must have enveloped the vast plains of Siberia.

### History of Working.

"Human remains have also been found—a skull at a depth of ten feet in the Chtogolev mine in 1860; ancient hearths; also a stone slab with inscriptions in a mine in the basin of the Kigas.

"A feature altogether peculiar to the Siberian placers, especially those in the district of Lena, Zeya, et cetera, is that the soil remains perpetually frostbound or thaws only slightly in the summer time. Near the sources of rivers places are found not frozen; these are said to be caused by warm or tepid springs beneath the surface of the earth.

"The working of Siberia gold mines dates only to the middle of the eighteenth century, at which period the first auriferous veins were discovered in the Urals and in the Government of Archangel. Gold was discovered in the Ural mountains in 1774. Several veins situated on the banks of the River Beregofka were worked with varying success from 1800. In 1895 the output was 19.46 poods (703 pounds). In the Southern Urals the first gold reef was discovered in 1799. The Kothkar reef yielded in 1894 about 85 poods (3,069 pounds).

pounds).

"Toward the close of the period 1870-1879 reefs were discovered in the government of Yenisei and the province of Transbaikalia. In 1894-95 gold-bearing strata were found in the district of Marunsk in the government of Tomsk.

"In 1866 the Amur province was opened to private trade; two years later mining was begun on the concessions belonging to the Upper Amur Mining Company, in the basin of the Djalinda. At the same period explorations were set on foot in the Maritime province, and in 1871 the first gold was taken from mines belonging to a Mr. Yetukof, in the basin of Amgoun. During the season of 1897 the Amgoun Mining Company treated 10,834 cubic sagens of gravel, from which 55 poods of gold were extracted, giving an average of 7,825 grams to a cubic meter. On the other hand, the Amur



immigrants, Siberia Bound-Copyrighted by Underwood & Underwood

Mining Company took out of their placers 203 poods (734 pounds) showing an average of more than 17.06 grams to a cubic meter."

Commercial Agent Greener of Vladivostok states:

"In 1896 the Government dispatched to the shores of the Sea of Okhotsk an expedition which, according to the latest news, has found rich alluvial drifts. There have recently arrived at this port direct from the United States six practical American miners under the auspices of the Russo-Chinese Bank. They are supplied with modern machinery, are men of experience, and go to Yumen, where rich discoveries are reported. They are the original 'Forty-niners' of the 'new California,' and it is reported that they will give new impetus to mining in the Maritime province. In conversation with one of them, who last year prospected in the Yukon, Alaska, the idea was emphasized that the whole region about Anadirski and the extreme eastern range of the Stanavoi mountains near Bering straits, would prove as rich as the Cape Nome region, since it was of analogous formation."

In 1901 the Scientific American published an article on the future possibilities of Siberia, in which the fcllowing appeared:

### A New Factor.

"The world has now to deal with a new factor. Ten years ago the name Siberia called up only a picture of wastes of snow and ice, boundless steppes and coast white with icebergs, but today the same Siberia is a land filled with thriving villages of peasant farms, producing grain and vegetables. The railway has succeeded in breaking down the bars between the world and Siberia. The vast country is now beginning to show its resources of gold, iron, copper, manganese, mercury, platinum and coal, the yearly output of which at present is but a favorable index of what it will be when the deposits are developed. In the past three years several American mining engineers have traversed various parts of Siberia and Central Asia, and they testify that the lack of exploitation of such evident mineral wealth as is found here is unparalleled in other parts of the civilized world.

"Of this, gold is by far the most important and, strange to say, it is the least developed product, being approximately \$25,000,000 a year, thus placing Russia fifth among the gold-producing countries. It is almost entirely placer gold, and the quartz veins and original deposits of gold, though exposed to view in many places, both in the Ural mountains and in Siberia, have been hitherto unworked in any but the most inefficient manner.

### Antiquated Methods.

"Furthermore, antiquated and expensive methods are in use by even the largest companies for working the placer deposits. These methods have undergone no improvements during the last fifty years. At numerous mines in Siberia 2,000 men and 500 horses are used on a single property to produce gold not exceeding \$2,000,000 per annum; and in some of the platinum mines of the Urals the above-mentioned quota of men and horses is employed for an output not exceeding \$800,000. The properties may be easily worked with the employment of dredges and mineral excavaters, and even the auriferous gravel could be advantageously carried to the washing machines by wire rope gravity conveyors. The gold output of the Russian empire could be increased to three times its present amount by the use of modern mining machinery. Of the quartz deposits in Siberia it may be said that they are entirely undeveloped. There are probably today not over a dozen stamp mills operating in the whole country, and it is doubtful if over 150 stamps are in use. Notwithstanding this fact the operations frequently pay large profits. Deep mining is unknown. It is doubtful whether there is a single shaft within the limits of the Russian empire which has penetrated to a depth greater than 700 feet.

### Few Mountain Obstructions.

"The difficulties of transporting machinery to the deposits is much less than is generally supposed. Of high mountains such as the Rockies and the Sierra Nevada, Siberia has practically none. The interior is penetrated by a network of vast waterways, rendering inland transportation easy and cheap. Heavy freight can be laid down in Central Siberia at the majority of the mines, the freight not exceeding \$40 a ton from New York, and if water transportation is made use of this price may be reduced nearly one-half. The freight loaded at Hull England, is transported via the Arctic Ocean to the mouth of the Yenisei river, where, after being reloaded to steamers of lighter draft, it is shipped direct to the crossing point of the Trans-Siberian Railway. From San Francisco to East Siberia it is a matter of water transportation entirely. Regular steamer lines furnish excellent accommodations for passengers, and it is now possible to go from New York via Berlin, Moscow and Irkutsk to Vladivostok on the Pacific in twenty-five days. A railway which shall connect Asia and Siberia at the Bering strait will probably be built in the near future; notwithstanding the terrific cold of winter it will not be so difficult to build as it was to construct the line of the White Pass and Yukon Railway.

### Labor Rates Low.

"The prices paid for labor in Russia and Siberia are exceedingly low, varying from 15 cents to \$1.50 per day, the laborers feeding themselves out of their earnings. This large range in the price of labor depends greatly on the locality and whether food is plentiful or not. In Central Siberia men can be contracted for by the year at \$15 per month; the workmen are of the peasant class. It is not thought that laborers in Siberia will at once alter their methods, but this will come in time.

"The mining laws of Russia allow the taking up of mining claims by Russians or foreigners but there are severe restrictions. The claims consist of 200 acres of land, generally surveyed at the locator's option.

"Cities of 10,000 to 50,000 inhabitants are now numerous in Siberia. Hotels with comfortable rooms,

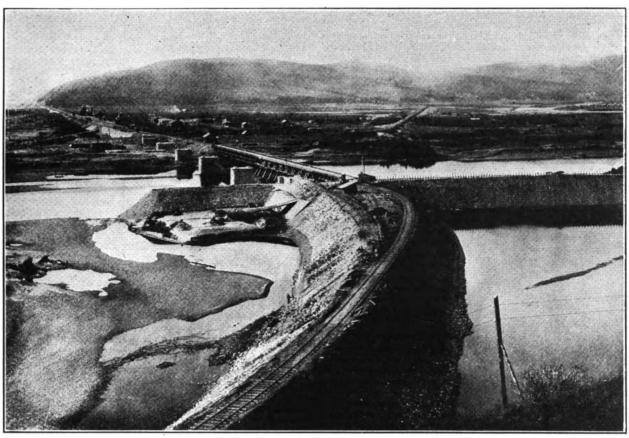
"Cities of 10,000 to 50,000 inhabitants are now numerous in Siberia. Hotels with comfortable rooms, restaurants which may be said in many cases to be truly palatial, with electric lights and telephone connections, are not difficult to find, says Consul Thomas Smith, of Moscow. Anyone can traverse Siberia in great luxury in superb trains supplied with bath, piano, dining saloon, drawing room, easy chairs, observation cars, et cetera, the whole being lighted by electricity. The cost of the journey from Moscow to Irkutsk, 3,200 miles, including sleeping car, is only \$44. Siberia is practically unknown to most Russians, and they have an idea that furs are always necessary on account of the intense cold. Actual experience in the city of Krasnoyarsk shows that the thermometer reaches 110 degrees for days together in the month of August, and any clothes but those made of silk and linen were absolutely unendurable. To those who wish an unhackneyed trip, Siberia furnishes an excellent opportunity."

### The Trans-Siberian Railway.

The Trans-Siberian Railway was commenced in 1891 at Vladivostok and November 7, 1901, through railway communication was established between this city and European Russia, thus uniting the South Ural steppes of European Russia by means of the Samara Orenburg Railway, which was originally opened in 1877. Thus access was given to one of the richest granaries of the world, as the steppes are exceedingly fertile.

The Trans-Siberian Railway extends from Tcheliabinsk to Vladivostok, a distance of 4,125 miles, and to Petrograd, which is 6.777 miles from the same city. For 1,072 miles it passes through Chinese territory in the provinces of Hoi-Lung-Kiang and Kirin, which are the most northerly provinces of Manchuria. In this section the line is operated by the Chinese Eastern Railway, which is nominally a Chino-Russian corporation.

Up to the end of 1903 the cost of the Trans-Siberian Railway amounted to \$172,525,000. For economical rea-



Along the Trans-Siberia Railway

sons the line was run straight as far as practicable thus leaving important cities miles away from the railway stations. For instance Tomsk is forty-five miles away, while Tcheliabinsk, Kingan and Omsk, all important cities, are all from one to six miles off the line, and the Irkutsk depot is separated from the city bearing that name by the Angara river, which is of considerable width.

### Few Engineering Difficulties.

By these means few engineering difficulties were encountered, the principal being bridges spanning large rivers such as the Irtish, Obi and Yenisei and the tunneling around the southern end of Lake Baikal, which with one other exception comprises the whole system of tunnels throughout the entire length of the line.

After the Russo-Japanese war traffic greatly increased on the line, rendering it one of the greatest commercial highways of the world. Prior to the great European war through bookings might be made along all points in the Far East and tickets were procurable at all the chief European and United States cities.

The time occupied on the run from Vladivostok to Moscow is eleven days, Vladivostok to Irkutsk taking four and a half days, while Irkutsk to Moscow is accomplished in six and a half. From Vladivostok to Harbin takes a day and a half, and even Peking can be reached from the great European capitals by rail in eighteen to nineteen days. The government used to run, twice a week, the Trans-Siberian express, and an international train de luxe was also run weekly, which although more expensive afforded far greater comforts and conveniences, albeit at greater cost. The figures for 1906 show 1,841,000 passengers and 259,200 tons of freight were carried, the gross receipts being \$18,838,000. These figures showed an increase of 276,000 passengers, 17,600 tons of freight and \$4,166,000 over 1905. There is

good reason to believe that these figures were greatly exceeded each year prior to the outbreak of the Great War, and the latest available, which were published in 1913, are given in a subsequent paragraph.

### Sections Important.

Retween Taiga and Tomsk, a distance of forty-five miles, connecting the latter city with the main line, is one of the most important sections. Another section connects Karamskaia to Stretensk on the River Shilka, which has been since continued along the Amur to Kharbarovsk, thus giving Russia a Trans-Asiatic railway entirely on her own soil. Another important line is from Nikolskoe to Khabarovsk in the Maritime province, which is 474 miles in length and is of great commercial value, passenger and freight traffic almost doubling in 1906 the figures of the preceding year, while the revenue was more than two and a half times as much. Much greater increases have been made yearly since. At Nikolskoe this line connects with the Trans-Siberian but passengers are not allowed to change cars there, as all trains start from Vladivostok. This line is usually called the Ussurian line on account of passing near the Ussuri river.

The following article, referring to Russian migration, appeared in the Japan Advertiser, published in Yokohama, Japan, October 1, 1908:

### Great New Nation.

A great new nation is forming in Siberia. One of the greatest migrations in history has been proceeding so quietly that the world generally has not noticed the movement. During the past twelve months over 500,000 Russians have gone to Siberia, or equal to half the number of immigrants the United States received during that period from the whole world. Prince Vassiltchikoff, minister of agriculture, has furnished the Douma with the following figures of the emigration across the

Ural mountains: For several years before 1906 it was 60,000 annually; in 1906 it was 180,000; in 1907 it was 400,000 in the first three months of this year it was 420,000, comprising 70,000 families. The accounts of Siberia brought home by the soldiers returning from the Russo-Japanese war impressed the poverty-stricken moujiks with glowing ideas of Siberia's wealth. The emigrants seldom go singly or even in families, but gather in colonies for the exodus.

### On Chinese Territory.

At Manchuria, 4,326 miles from Moscow, the train enters Chinese territory. There is fine rolling land on each side of the line, with scarcely a living being to be seen except the railway employees and gendarmes at the railway station. Every few miles along the line are guardhouses in front of which stands a Russian soldier at attention. Occasional bands of sheep and goats are seen, the shepherds being mounted on small ragged ponies not much larger than a prize St. Bernard dog. From this point east all of the common labor is supplied by the Chinese, the foremen being Russians.

Approaching Harbin, 5,220 miles from Moscow, some cultivation is noted, but of no considerable extent. At this point passengers with Chinese destinations leave the train. Vladivostok, now the principal Russian port on their east coast, is reached the following morning.

### Agriculture Practically Untouched.

Harbin, the principal city of Northern Manchuria, is the junction point of the Russian Southern Railway line, running on through to China, and the Trans-Siberian. To the present all of this immense territory is comparatively untouched as regards agriculture. Its great possibilities are shown by the 20,000,000-bushel wheat crop grown in 1908, and yet one can not see from the railroad a single acre that has been plowed. Near the cities and large towns the Chinese, who are high class gardeners, have small patches devoted entirely to vegetables, but aside from these only the virgin steppes and forests are in sight.

It is generally admitted by those in a position to know that this country, so highly favored by nature, is on the eve of a great development along modern lines. This development will not take place with a rush, but will be of a slow and sure growth.

At Mukden there is a large agricultural college presided over by a Chinese gentleman educated in the United States, who is instilling in the minds of the younger generation the possibilities in scientific farming.

From the Baikal at Irkutsk to Moscow is 3,400 miles, and including the two terminals, there are five cities on the Trans-Siberian Railroad. They are Irkutsk, Omsk, 1,554 miles west; Tcheliabinsk, 493 miles farther west; Samara, 728 miles east of Moscow, and the latter city.

Irkutsk is much the least important of the cities mentioned.

### Kansas City of Siberia.

Omsk is the best point on the whole line of the Trans-Siberian road. It may well be called the Kansas City of Siberia. As is the case with most Russian cities, the railroad station is nearly three miles from the city proper. The main street has severals blocks of fine buildings erected mostly by Moscow merchants for the homes of their branch establishments. The territory adjacent to and for which Omsk makes a fine central business point, is ideal farming land. For 150 miles north of the line of the railroad and hundreds of miles to the south and southeast, stretching away down to the Chinese frontier, are millions of acres which only need a modicum of working to produce wonderful crops. Following Kansas City's example, Omsk is becoming the distributing point for this immense territory, and it sounds almost like a fairy tale when one is told the money values of the implements already being sold from there. When one considers the possibilities for the future it is amazing.

### Duplicating The Line.

In 1911 the Russian government commenced great improvements to the line with the idea of duplicating the approaches in both Furopean Russia and the East. It was anticipated that this work would be completed during 1915. Ab initio the cost to the government would exceed \$1,000,000,000, which vast sum provided for a complete double track system with double approaches from the Urals to the Pacific, a total distance of 6,844 miles. By the construction of the Amur line of 1,344 miles at a cost of over \$149,000,000, the entire system runs on Russian territory, eliminating the previouly existing Chinese Eastern line.

Up to 1907 the outlay on the Siberian and Manchurian railways was \$422,412,000. The exploitation losses brought up the cost to nearly \$1,000,000,000, or about \$146,827 per mile, notwithstanding the fact that one-half the line was run on flat country and practically no land compensation was paid.

The latest figures for traffic, published in 1913 for the year 1910, were: 142,600,000 passengers, an increase of 13,800,000 over 1909, and 22,600,000 over 1908.

Luggage and goods, 2,259,000 tons, exceeding the two previous years by 8,98 and 14.96 per cent respectively, while slow freight carried 144,246,600 tons, an increase of 5 and 11-12 per cent respectively.

Revenue amounted to \$342,226,395 and was greater by \$20,666,291 than that of 1909 and \$40,410,852 than that of 1908.

### General Expense.

General expenses at \$250,970,360 were less by over \$6,000,000 than in 1909 and \$15,000,000 than in 1908.

In 1908 Asiatic Russian lines showed a deficit of nearly \$6,000,000, in 1909 over \$2,500,000, but in 1910 a profit of very nearly \$3,000,000 was made. The number of employees was 561,075 and the salaries paid amounted to \$115,006,229.

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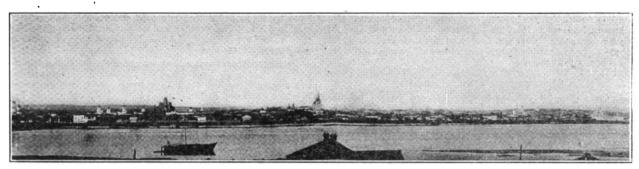
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## **IMPORTERS**

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Along the Waterfront at Irkutsk

The Exporters' Encyclopaedia, 1917-18 published the following:

"While merely of local importance as far as traffic and commerce are concerned, Lake Baikal deserves attention as the sixth in size of all the lakes in the world, being 376 miles long and from 20 to 70 miles wide. Its area is 13,500 square miles, and it is some 1,500 feet above the sea level. The greater part of this lake is of extraordinary depth, the maximum being 791 fathom."

### Line Now Complete.

It was thought that the Amur railroad would be finished in 1917. Its length, with the branch to Blagl-veshtchensk, will be 1,315 miles. Upon the completion of the Amur railroad it is the intention of the Russian government to take over control of the Ussuri line between Khabarofsk and Vladivostok, 556 miles in length, which was leased in 1906 to the Chinese Eastern Railroad. The total length of the government railroad system in Siberia will thus be enlarged by 2,229 miles, and the Department of Ways and Communications has decided to reorganize the management of the road in accordance with local conditions and the expected increase in traffic.

The Russian government is taking in hand several important undertakings in the Russian Far East, notably the equipment of Vladivostok Harbor, where accommodation is to be provided for not less than twenty-five ocean-going vessels. A complete project to equip the port with cranes, repairing shops and electric plant has been formulated, and also to provide railway communication between the new wharves and the main line. The cost of the harbor extensions and railway facilities will be about \$5,000,000 and the period of construction will be five years. A sum of \$79,000 has been allotted for the building of a power station. Other proposals now being investigated include water supply, sewerage, the dredging of the approaches to the Amur, and the improvement of the means of communication. On all sides there are signs of a policy to develop this part of Siberia, and recently there has been a demand for brickmaking and refrigerating machinery, crucible steel, lathes, and workshop equipment, engines for motor boats, portable engines and corrugated and flat iron sheets.

### Future Outlook.

Existing conditions since the overthrow of the monarchy and the general state of chaos following have prevented any accurate data being published. There is every hope, however, that the reconstruction policy now being pursued will result in the whole line being in general and peaceful use in the very near future, which will be of the utmost assistance in the great work of development now in progress. When this is brought to pass this line bids fair to become the greatest commercial carrying system in the world.

### The Oil Industry.

The chief industries of Siberia are those provided direct by nature, minerals, fish, timber, salt, furs and petroleum.

Oil was believed to exist on Saghalin island near Eastern Siberia and in 1898 an Austrian mining engineer, F. F. Klege, an expert from the oil fields of Galicia with later experience in Java and Sumatra, made extensive investigations, and reported the results to the Society of Austrian Mining Engineers. But little development has taken place in this field, but Mr. Klege's report is unusually interesting as the following extracts will show

"In my search for the naphtha deposits on the island of Saghalin, I went from Alexandrowsk, on the west coast of the island, into the interior as far as Derbinsk, on the River Tym, whence I followed the river down to the eastern coast. After much trouble I succeeded in securing the services of some Russian-speaking Crotchons, who make their living in raising reindeer, and are well acquainted with the country. From these people I learned that far up in the north, naphtha, called 'Nephtogen' by the natives, occurred in many districts.

"After a voyage of about a week we arrived at Wal, where the Starost (mayor) informed me that he knew of two large naphtha deposits, one of which, he said, was situated near the River Nutowo and the other at the source of the Boatassin River. The next day we reached a hill called 'Nephtogengora' (naphtha mountain). While advancing over the last few miles, along the river, I noticed that the water of the stream was entirely covered with a coating of oil, and a heavy smell of naphtha announced that we were approaching a great deposit. We then came to the first naphtha sea, situated between two hills, and after having crossed the hills, we reached the second oil lake, which was far larger than the first. What I here saw really surpassed all expectations. I had never in my life seen or heard of such immense lakes of naphtha.

### Investigation Commenced

"The next morning I began my investigations. This liquid naphtha I found to possess a specific weight of 0.925 at 14½ degrees Celsius, and was of a reddishbrown color. Oil taken from another deposit had a greenish red-brown color, and a specific weight of 0.9055 at 14½ degrees Celsius. Later on when I arrived at Alexandrowsk I distilled the oil and found that a quantity of 2½ quarts, heated to 150 degrees C., contained only a few cubic centimeters of benzine, and at a heat of 300 degrees Celsius 27 per cent kercsene. The heat was then developed to 500 degrees when a first class lubricating oil was obtained.

"From the height of these hills, at the foot of which lies a third large naphtha lake, I noticed a large broad, gleaming surface, and on nearing it, discovered another large lake, 1,435 feet long and 280 feet wide. At the edge of these four lake-like deposits there were numerous smaller oil wells, from which the oil continually exuded under strong pressure. Further up the Nutowo River I also found considerable deposits of naphtha.

"The various hills stretch in the direction of the meridian, which is also the direction taken by the oil streams; voluntary courses I could nowhere find; furthermore, in numerous diggings I could find no beds. At one digging I penetrated first a 10-foot deposit of asphalt, then 10 feet of sand, before reaching the more solid foundation of clay. In spite of all safety measures, it was not possible to control, without pumps, the

underground water from pressing upward, and the digging had, therefore, to be abandoned; in spite of all these obstacles, however, the exodus of oil was so great that a considerable supply underneath can assuredly be counted upon.

### Discovery of Other Deposits.

"After four days' work, and after I had minutely taken the location of the most important deposits, we began the return journey, during which I marked the entire way with the compass. On the first morning we reached by boat the mouth of the Hagdusa River. We landed here and continued on land across an almost level plateau. After walking about four versts we came in sight of the outlying hills, and another verst brought us to the naphtha deposits at the source of the Boatassin

River.

"The entire outcrop line, forming more or less naphtha deposits, runs along the river to a long line of hills; the direction of these hills was also parallel with the meridian. Although these naphtha deposits were not so immense as those on the Nutowo by far, they are of great importance in view of the fact they are scarcely twelve versts distant from a good seaport. possessing accommodation for the largest ships, and also since the country offers practically no obstacles in the way of transporting materials, laying conduits,

etc.

"The entire east coast of Saghalin, as far as examined, belongs to the 'tertiary formation.' All naphtha outcrops that I saw extend in the direction of the meridian. The naphtha deposits are embedded, without exception, parallel in the axis of the anticlinal flexure of the strata,

and are very rich.

"Furthermore, when the important difference between the specific weight of naphtha of 20 feet depth and of that lying open is considered, it may be accepted that the deposits will supply raw oil sufficiently rich in kerosene. It is certain, however, they will supply a far richer raw oil than the wells of Baku, to which the raw oil of the eastern coast of Saghalin is very similar. It is, therefore, to be expected that not only a second Baku will rise, but that Saghalin 'Baku' will far surpass the present 'Baku.'

### Prophecy of Development.

"It must be remembered, in prophesying the development of Saghalin, that it is only possible to reckon on a shipping season of from seven to eight months; the short stoppage during winter should, however, be outweighed by the extremely favorable shipping facilities, which are not surpassed anywhere in the world.

"With regard to the working of the naphtha deposits,

"With regard to the working of the napfitha deposits, it would be comparatively easy to transport the oil in tank steamers to a point near Vladivostok, where ex-

tensive refineries could be erected."

Since the foregoing was written, an English syndicate with a capital of \$500,000 has been formed for the purpose of taking over the three naphtha deposits described above. The syndicate, which is composed of three large London firms, is called "The Saghalin and Amour Petroleum and Mining Syndicate, Limited," with head offices in London.

Since the English have taken the lead, the attention of the mining world will no doubt speedily be turned to Eastern Siberia, with the result that foreign capital will find a way to the development of the rich mineral

deposits of that country.

Even with all the alluring prospects that this vast field holds out, but little progress has really been made, and in 1911 a report was issued which only gives the small results achieved up to the latter part of 1910.

The report states:

Only four concerns of any importance are interested in the Russian Saghalin oil fields. The most active organization in the field is doubtlessly the China Oil Company, headed by the German engineer, Kleye, and backed by Tientsin capital, but although about \$200,000 has been expended on pipe lines, telephones, and houses on the claims along Nutovo and Boatassin Creeks, only two holes of small diameter have been

sunk by hand drills, and the first steam drill was started late in 1909. The results are as yet unknown, although the Vladivostok papers have reported that a flow of oil has been struck.

The St. Petersburg company, of which Prince Radziwill is the head, was organized under English law as the Second Saghalin Oil Syndicate, and has been deligently engaged in staking claims, of which it now has over 300 scattered over the entire Saghalin oil territory, and all these claims have been registered with the Saghalin district engineer. Medviedeff, who is quoted as stating that, although a number of British well-drilling experts from the firm of Thom visited the oil territory of northern Saghalin during the summer of 1910 in the interests of the St. Petersburg company, and some apparatus arrived in the fall of the same year, active boring operations are not promised until the summer of 1911.

The Vladivostok company headed by Engineer Artz, from Poland, is composed of about 40 members, consisting of civil officials, military and business men of Vladivostok and the neighboring territory. This company has succeeded in staking claims in nearly all localities where oil springs and paraffin lakes have been found, and apparently engaged well-informed prospectors. Its claims may be reached from five harbors.

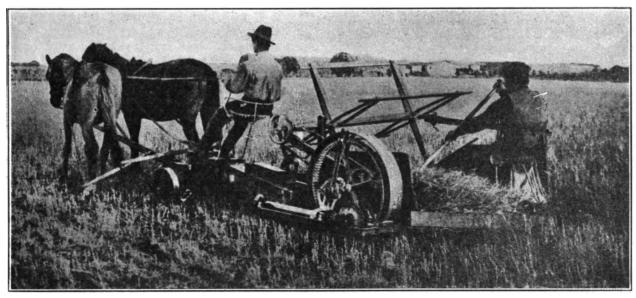
### Preliminary Development Work.

The oldest concern is the Zotoff company, backed by Shanghai capitalists. The property of this company consists of about 1,800 acres on Oha Creek, and was granted in 1889, and no work of any kind was performed for 21 years—i. e., until the fall of 1910.

The first hole on the Zotoff claim was started in December, 1910, in about 7 feet of snow, on Oil Creek in the neighborhood of a number of lively oil springs and within a quarter of a mile of the big paraffin lake. The work was done by a rotary hand drill with a toothed cutting shoe. A 5½-inch pipe was used for casing to a depth of 172 feet, from which point a 4-inch pipe was used. After passing through 22 feet of turf, black mud, sand, and clay, a layer of black bituminous oil sand was struck, which was found to be nearly dry; this was followed by brown sand of coarser grain, and after this, between 33 and 54 feet from the surface, a layer of fine sand heavily saturated with dark-colored heavy oil, but without gas, as so volatile a matter could not be maintained at so shallow a depth. From 54 to 105 feet different layers of sand were found in rapid succession, a 15-foot vein of quicksand giving considerable trouble, twice clogging the pipe and once raising the tool in the pipe 30 feet. From 105 to 405 feet hard gray clay saturated with oil alternated with shale and streaks of oil sand in the following manner: From 105 to 201 feet, hard gray clay saturated with black bitumen, followed by drops and streaks of oil, first thick and heavy, and then more liquid and lighter in color; the clay gradually became softer, only to run into hard shale at a depth of 200 feet. From 202 to 213 feet, clay shale (argilite) of 200 feet. From 202 to 213 feet, clay shale (argilite) the hardest layers, most porous and saturated with oil; the later fluid and of a greenish color can be ignited with a match. From 214 to 346 feet, the same shale was found, but containing more oil, and cracks and streaks of sand followed, with oil and gas more frequent. From 347 to 369 feet, hard argilite filled with oil was found; and from 370 to 388 feet, gray clays alternated with sand filled with oil and gas, which was followed by fine sand and clay saturated with oil from the three hundred and eighty-ninth to the four hundred and second foot. The following 2 feet was through argilite, and hand drilling stopped, as the small hand drill which had been operating from the two hundred drill which had been operating from the two hundred and seventh foot with only a 4-inch pipe, of which the inside diameter was 31/2 inches, had reached its limit. Oil filled the pipe throughout the drilling and flowed slowly out of the top of the hole. The account of the flow is shown by the following extract from the drill foreman's diary:

May 22—Depth 380 feet, oil level raised 97 feet during the night, and now stands less than 20 feet from the





Reaning Machines at Work on Siberian Farm

surface. Strong signs of gas illustrated by the fact that the oil in a bucket one-third full will rise to the edge and often overflow.

May 23—Sunday, no work, oil flowing out of the hole. Gas stronger.

May 24 Continued drilling

May 25—Oil continues pouring out of the hole.

May 27—Depth 393 feet. Tried hoisting oil with bucket made of sand pump; took about 250 gallons before noon. During the noon hour the level raised 30 feet. Continued hoisting oil in the afternoon.

May 27—The cil noon 90 feet during the night.

May 29—The oil rose 89 feet during the night. Con-

tinued drilling.

June 5—Stopped drilling, as tools would not reach farther. Oil flowed out of the hole.

### Favorable Climate for Working—Good Harbors.

The close proximity of the Okhotsk Sea, which is always open, makes the climate on the east coast of Saghalin Island more moderate than on the west coast or on the mainland in the same latitude. During the winter of 1909 and 1910 the lowest temperature registered at Oha Creek, near the northern end of Saghalin Island, was 22 degrees in the morning at the end of December. The same day at noon the temperature was 5 degrees above zero. The men at this claim worked outdoors throughout the winter without the least discomfort, and were occupied in cutting and hauling timber and building houses, in addition to drilling. Although working continuously throughout October in cold weather discharging and transporting cargo by boat, and being compelled to work in wet clothes for a week at a time, there was no sickness among the men, not even a case of bad cold. The snowfall during November, December, and January is heavy, due to the evaporation of the open sea and the extreme cold.

There are four harbors on the east coast available for the oil district, of which Tshaivo is suitable for large sized vessels, the other three, Piltun, Ny, and Nabil, having, respectively 13, 17, and 13 feet of water on the bar at low tide; the high tide increases these figures from 5 to 7 feet, and this is sufficient to admit coasting vessels, even in a rough sea. Drift ice settles along the coast in December and clears off in April or May, but may be encountered again floating in the Okhotsk Sea, which is always open. This drift ice is rather uncertain, depending upon the wind and the conditions of the weather. The bays are frozen over in November, but if shipping develops the entrances could be kept open for a long time after the first appearance of ice. The depth at low water at the entrance of Nabil, Ry, and Piltun is not great, and deepening with suction

dredges would not be expensive, as the bottom is sand and clay. The Russian Government could likely be induced to do something in this direction. After looking into the possibilities of communication, there is no reason why a steamship service could not be kept up between the harbors of the east coast of Saghalin and the rest of the world for seven to eight months during the year, and it should be borne in mind that Vladivostok is only four to five days' steaming from the harbors which lead to the oil fields.

All labor would have to be brought from the mainland, as the only inhabitants of the east coast are Giliak fishermen and hunters, who live in small villages, and Orotshen deersmen. The Russian Government has recently established a few small Russian villages on the northwest coast of Saghalin Island. Timber for building purposes is plentiful, and good water is to be had everywhere.

Doubtless when order is restored and with the enormous demand the world over for oil, developments of these wonderful natural resources will be proceeded with rapidly. Should Germany be allowed to further exploit this field, she will undoubtedly find it of great value, as it has all along been believed that this was one of her reserve sources of supply which she did not wish to utilize commercially while she could get plentiful requirements nearer home with less difficulty and at lower cost. Indications are that this field may be one of Siberia's potential future assets.

### Area of Siberia Enormous

The enormous area of Siberia, which stretches from West to East, 6,000 miles from the Urals to the Pacific, naturally affords vast fields for many classes of produc-

Up to a few years ago this country was regarded as a desolate, dreary waste of snow and ice, and in addition the recognized deporting ground for anarchists and nihilists from the more enlightened portions of Russia. Her vast potentialities were but little known even among her own people. She was a practically unexplored land.

Within her borders, vast physical conditions are found—fertile plains of black earth, boundless grazing steppes, rolling downs, rugged plateaus, gloomy forests and frozen toundras.

The Western Siberian plains run for nearly 1,200 unbroken miles to the Altai Mountains and plateaus, the source of her great rivers. The plains of the Western and Central provinces extend over 1,000 miles from East to West. The far northern region which borders on the Arctic and extends to latitude 62 degrees is

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chiefly "tundra" country or level, mossy waste. Adjoining this south, latitude 57 degrees to 62 degrees, comes an enormous forest belt and here we also find the fur bearing zone where dwell but a few fur traders. Still farther south, fifty-five degrees to fifty-seven degrees, comes the fertile black earth zone or "lyeosteppe." In this zone the forest merges into the steppe and for some years this has been the agricul-tural mecca for European Russians. Still farther south come the dry steppes inhabited by Tartars chiefly engaged in live stock raising.

Between latitude 57 degrees and 54 degrees is the richest, black belt in all Siberia and said to be the rich-

est in the whole world,

#### Immense Agricultural District

It is estimated that in the provinces of Tobolsk and Tomsk alone, there are 190,000 square miles of fine agricultural land, with other large tracts almost as fertile in adjoining provinces. All this country is even yet but sparsely populated, although immigration on a considerable scale started some few years back.

An idea of the undeveloped area and what the future possibilities are can be gleaned from the fact that in 1912 under three per cent of this vast fertile land was settled or under cultivation. Emigration from Eastern Russia in ten years— 1894 to 1913—amounted to 590,000 souls, the three years following to over 1,000,000, in 1909 to 500,000, but owing to exceedingly good crops in Russia proper in 1910 to 1911, fell to 189,000.

It is estimated that this black earth zone, between latitude 55 degrees and 57 degrees to the Altai, is capable of supporting half a billion people. In 1912 the total population of Siberia was but 8,000,000.

The year before this century started was the first to see the exportation of Siberian wheat, but as early as 1894 dairy produce was shipped to the interior of Russia and in 1897 to Western Europe. In 1904 this trade had increased to 681,000 hundredweights. The trade was immensely profitable until that year when a great influx of Germans and Danes appeared upon the scene and by forcing up the price of milk unduly killed the goose that laid the golden eggs, since the price of production became such as to prevent competition into Western Europe.

### Chiefly Inhabited by Tartars

The Southern zone of Western Siberia is chiefly inhabited by Tartars and the products are livestock, (cattle and horses) wool and hides. The chief commercial centers are Petropavlovsk and Omsk, adjacent cities to the Trans-Siberian Railway. Trade from the former city to Western Russia, in 1912, in meats amounted to 300,000 tons a year but lack of refrigerating facilities precluded business being done farther afield. Since that date some steps in the establishment of cold storage plants have been made with the idea of fostering the trade. Pig breeding has been greatly developed as an adjunct to dairying and several bacon-curing plants have been established.

Glancing for a moment to the Western Siberian forest zone, we find from Tobolsk to Obdorsk (north and south) from Tiumen to North Tomsk (east and west) a huge forest of 200,000 square miles. This enormous area which is covered with red wood, white wood and Siberian pine is practically untouched, owing to lack of transport. The chief value of this timber lies in its softness, and although it has to stand a 2,000 mile journey along the Canadian yellow pine, although the trade has not as yet attained any great magnitude. However, the possibilities for a gigantic enterprise are undoubtedly there. As an illustration of timber prices (except Siberian pine) in 1912, large red and white wood board only realized four cents per pood in the principal towns.

East of the Urals, latitude 55 degrees and 56 degrees, are and have been since the sixteenth century, wonderful fur hunting grounds. Long years of trapping have not been without their effect for although the grounds show

no sign of exhaustion the quality is not so good as formerly.

In Central Siberia agriculture and stock raising are the chief industries, which entirely supported 560,000 peasants in 1912. Stock raising, however, since that date has rapidly given place to cereal growing, or rather agriculture has spread to a greater extent than stock raising, which industry, however, still continues to hold its own. Rye and wheat are principally grown, while cattle, horses and pigs are the chief herds, the reindeer also is a very payable proposition. In all, the livestock number about 2,000,000 head apart from 500,000 sheep. all of which do well on the summer grazing area of the steppes, where the climate is so mild as to do away with artificial winter feeding. The meats supply the

local markets while the skins are shipped to Europe. It is impossible to give the figures of the fur trade at the present day, but in order to show the possibilities at the present day, but in order to show the possibilities that exist the numbers sold at the local fair at Irbit in 1911, are highly interesting. Squirrel 4,525,000, rabbit 1,500,000, sable 12,250, ermine 200,000, brown bear 1,500, weasel 180,000, gray wolf 16,500, fox 15,000, as well as many tiger and other skins. The total amount realized was approximately \$4,000,000. Prices were about twenty per cent higher than in the preceding year. The long-haired tiger is still found in considerable numbers and from here come the largest bears in the world. A law prohere come the largest bears in the world. A law prohibiting killing or in any way trafficking with sables for a period of three years, came into effect which resulted in a great rise in price so that in 1911 at the country fair of Irbit the skins fetched over \$200 each. Black foxes realized up to \$500 each for the best and gray wolf skins to \$13.

In cereals the production of the Amur and Maritime provinces in 1911 were beginning to assume considerable

proportions.

proportions.

Rye amounted to approximately 9,000 tons, wheat 170,000 tons, oats 180,000 tons, barley 5,000 tons, millet 7,000 tons, buckwheat 16,000 tons, beans 3,500 tons, potatoes 67,000 tons, and hemp and flax to 300 tons. There were then 214 flour mills in Amur province, 43 being steam, 111 water and 60 wind power, while the Maritime province provided 474, of which 115 were steam, 220 water and 139 wind power. These were apart from 38 rice and groat mills. It might be mentioned that the town of Blagovichtchensk in Amur province ranks as the third

groat mills. It might be mentioned that the town of Blagovishtchensk in Amur province ranks as the third of all the milling towns of Russia.

The fishing industry is one of great value to Siberia. In 1911 it largely fell into Japanese hands, much of the product being shipped to Japan as fertilizer. In this year over 80,000 tons of fish and fish products were exported to Japan, valued at over \$2,575,000. The varieties were chiefly dog and hump-back salmon, all of which was shipped from Kamchatka and Nikolaiofsk. In 1910 and 1911 over 40,000,000 salmon were caught on the lower Amur, besides herring, lamprey, crawfish and dollower Amur, besides herring, lamprey, crawfish and dolphins, while of caviar about 2.500 tons were obtained In the Nikolaiofsk district for the same years the catch was over 65,000,000 salmon. A pronounced falling off in recent years has been noted in the Amur river production but that of Kamchatka is ever increasing and great difficulty has been experienced in securing enough boats to harvest the catch. This latter district produces boats to harvest the catch. This latter district produces 5 varieties of salmon, king, dog, red, hump-back and sockeye. The average weight of the king salmon is 20 to 25 pounds; the dog, 10 to 12 pounds; the red 10 pounds; the hump-back, 5 pounds. The fish all run at different seasons, commencing with the king in May and ending with the sockeye as late as November. Of 141 seacoast fishing stations only 7 were worked by Russians, Japanese taking care of the rest. The caviar is entirely prepared by Russians who buy it from the Japanese. In 1911 over 500 tons were marketed 500 tons were marketed.

The cost of catching and preparing salted dog salmon and delivering to Vladivostok enables it to be sold there at about 2 3-5 cents per lb.

The suitability of Kamchatka fish for canning has been amply demonstrated and in the future large developments in the trade may be looked for, the varieties of fish and the long seasons being prime factors towards

#### Resemblance to America

The value of mining to Siberia, previously mentioned, is accentuated by the following statement of Carl Ackerman, the noted war correspondent, who is a recent arrival from that country:

"Actual facts bear a remarkable resemblance to the dreams that led to the exploration of America—the picking up of precious metals without work. In the Baikai region there is a hill which is covered with pure asbestos. All that is needed is a pick and shipping facilities. A railroad engineer in another district exhibited a box of minerals gathered off the ground. Asbestos, copper, lead, mica and gold ores were among the specimens represented."

Recent reports also call attention to many payable deposits of wolfram in various parts of Siberia. These statements tend to show some of the sources of wealth of this country and denote means by which trade could be carried on pending a change in conditions and until cash becomes a more stable factor.

One thing is sure, that the uncertain value of the ruble will be conducive to a barter trade for some considerable period of time. That the day of cash is not far off though is evidenced by the fact that several strong banking institutions have already established branches at Vladivostok and Omsk, and it is to be hoped they will reap the reward of their pluck,

This article has dealt with Vladivostok more than any other Siberian city, since it is the one of greatest present commercial interest to America, notwithstanding that Omsk, the capital, exceeds it in population. However, a few words must be devoted to the Amur Province generally, and the following clipping from a recent issue of the London Times graphically describes what is to be met with there.

#### The Amur Province

"A while ago, the Amur was but a name to the majority of people, just a river in desolate Arctic Siberia where the Tzar sent his political prisoners, and very few realized that its course of close on 3,000 miles is through a land in the same latitude as Southern England and Northern France, a marvelously fertile land in the brief hot sum-

mer, but frozen hard for five months of the year. The river pours into the sea in the latitude of London at Nikolaievsk, a port that is closed for seven months in the year.

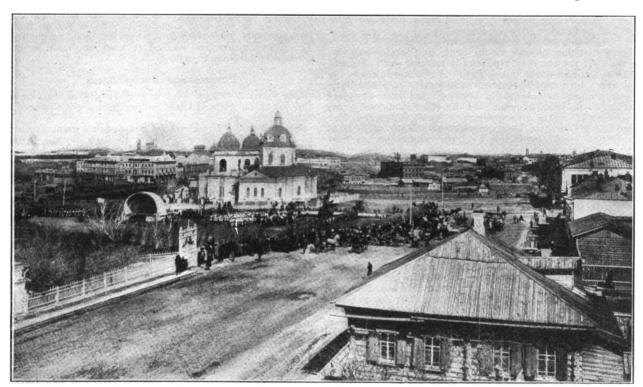
the year.

"The Amur is one of the mighty rivers of the world. Those who come up from Vladivostok, the most usual way of approaching it, meet it first at Khabarovsk, the center of the fur trade. Here, 640 miles from the sea, it is joined by the Ussuri and is over a mile and a third wide, an expanse of water like a great lake or the sea. Wider and wider it grows on its journey to the coast until often, what, with its backwaters and swamps near the mouth, it extends over forty miles of country. Even at Blagoveshtchensk, the capital of the Amur Province, nearly 1,300 miles from the sea, it is still a great river, the boundary between China and Russia. The town, spread along the north bank, with its spires and cupolas standing up against the soft northern skies and reflected in the still, clear water, looks like a Turner picture. Blagoveshtchensk is one of the four large towns of the Amur Province, a town of close on 50,000 inhabitants; the other three are Vladivostok, the naval base, Khaberovsk and Nikolaievsk."

### Another Opinion

At a lecture recently delivered in Seattle, the speaker, who was a man in a position to give authentic information, as he had resided in Siberia for many years, spoke of the future of the country very much on these lines: Our ideas of Siberia are all wrong. We are apt to look upon Siberia as a country of ice, snow and anarchy, peopled with convicts. The fact is these convicts are all political, mostly sent there for offences against the Czar. In reality, speaking generally, their ideas did not quite coincide with the powers higher up, and as they had no passports they were never allowed to leave Siberia. Many of them now are millionaires and occupy the highest possible positions. Many are highly skilled professional men who have made good. The bulk of the population, however, is chiefly composed of the peasant class who are almost entirely employed in agriculture, probably 90 per cent living by the land.

He went on to say that the great immigration and development of the past few years has opened up a vast field for machinery and stated that the old government



City of Omsk

(he did not say which old government it was) was very assiduous towards the farmer. They were granted up to 190 acres of land free and given deeds of ownership. These were then turned over to the government as a mortgage for the necessary machinery and stock required to work the farm. Forty of these machinery depots were established all over the country, so that the peasants were well catered for in this respect. Finally the land was so fertile and the crops so bountiful that the debt was speedily liquidated and competer.cy and even affluence were shortly the outcome.

His address concluded with the statement that what was required today in Siberia was an influx of pioneers, men similar to those who opened up Alaska, unafraid of toil and willing to lead a life of adventure, pioneers of all classes from the prospector and engineer to the merchant, who with a population of twenty-five to thirty millions to cater for, would soon be wallowing in trade. His urgent advice was to get in now and to brook no delay. Already, he said, the Japanese and English are there in numbers and we shall be badly left if we get cold feet on the proposition. We can supply competitive goods and geographically speaking, Seattle, San Francisco and Portland are the logical sources of supply.

Whether his views are correct or not, time alone will tell. At any rate they were the words of an enthus-

### Always a Disturbing Element

At a meeting a few days later another speaker, well versed on Russian affairs, described "The elementary savagery of the Russian people," whose lives were being wasted in a welter of revolution. "Russia," he said, "has always been a disturbing element in the past to Europe on account of Orientals, as well as Occidentals, being always at her front door.

"America, having been brought into the war, must make a friend of Russia or regard her as a continual menace. Much as she may wish to escape international entanglements she is now brought face to face with Russia in Asia. Doubtless under the guidance of the combined statesmanship of the world conflicting interests may be adjusted and gradually chaos may be dethroned. Bolshevists with strong German propaganda are in our midst. Thirteen factions exist in Russia, the atmosphere is dark at present and the only gleam in the horizon appears to be Siberia, where to put it at best, matters are not quite so bad as in other parts of Russia."

In speaking of the cities of Siberia, it must be remem-bered that they possess all the boom time snares and pitfalls. At present they are literally teeming with sharpers of the get-rich-quick type. Rufus Wallingfords meet one at every turn, and it requires considerable care and business acumen to conclude a business deal with any certainty of its being genuine. On the other hand vast numbers of co-operative organizations exist throughout the land, every district being represented. With these it is safe and usually profitable to form connections, as they know the conditions and requirements of the districts in which they operate.

#### Register With Your Consul

All foreigners visiting Siberia should immediately register with their respective Consuls and keep in touch with them as far as possible, for they can frequently in many ways be of material assistance.

#### Estimated Exports and Imports for 1919

Subjoined is a recently published forecast of Siberian trade for 1919: "The various commercial guilds in Siberia held a mass meeting in Vladivostok and discussed the prospects of this year's foreign trade. As a result of the discussion the meeting fixed the expected quantities of the principal expects and imports as follows: ties of the principal exports and imports as follows:

	ESTIMATED EXPORTS.	Pood.
Butter		2,000,000
Fats		100,000
Furs		250,000

#### ESTIMATED IMPORTS.

Agricultural Implements	2,500,000
Iron and Steel	2,000,000
Railway Materials	3,000,000
Cotton and Wool Goods	1,000,000
Boots, Shoes and Leather Goods	25,000
Soap	
Candles	25,000
Tea	
Sugar	
Matches	
Chemicals and Medicines	

It is believed that the realization of the above forecasts will depend a good deal upon the condition of the means of transport and the state of exchange. (A pood equals 37 pounds.)

While the above figures are only an estimate of 1919 possibilities even in these troubled times they are sufficiently large to give a sound idea of the vast openings for business.

#### Arid Land Requires Irrigation

Another point worth noting is that in Asiatic Russia there is an enormous quantity of arid land requiring irrigation, and in this we see a tremendous field for activity for American engineers.

Industries such as cheese making, canning, are only in the embryo stage in Russia, and American improvements

of methods and organization are needed.

All this development calls for the importation into Russia of agricultural machinery and tools and their use on a scale much greater than has hithereto been the case. Up to the time of the war the United States was exporting to Russia something more than \$20,000,000 worth of agricultural implements and tools annually. It is undoubted that with a proper organization this quantity could easily be doubled.

The development and improvement of Russian rural life can not take place rapidly with the present bad dirt roads. The rebuilding of these roads is one of the first necessities for the country. The application of American roadbuilding machinery and methods, instead of the patriarchal pick and shovel, would play a tremendous role here.

An uninstructed people can not be efficient in production. At present in Russia only 26 per cent of the population can read; perhaps 12 to 15 per cent can read and write. Up to this time common schools in Russia have been not only insufficient in quantity but poor in quality. The American practical method of teaching should be introduced into Russian schools.

#### Poverty and Uncleanliness

The Russian villager lives in poverty and uncleanliness, and for this reason sickness and epidemics are extraordinarily developed.

Diphtheria also is widespread and causes a great number of deaths among children. Many children die also from enteric diseases, because the mothers do not know how to feed them. All this sickness should be reduced by disinfection and sanitation of the village, the digging of good wells, etc. And here American knowledge could bring great benefit to the Russian village.

The Russian village is built principally of wood and roofed with wood, or with straw and stones. For this reason there are so many fires that, according to statistics, one-fifth of all the peasant cottages burn down every year, or, putting it in another way, every house burns down after five years. This seems improbable, but it is reliable

information.

It is necessary to introduce and apply American methods in building fire-resistant structures, to create cooperative brickyards and cement brick manufactories. Materials are found almost everywhere, and there are needed only knowledge, capital and organization, such as America could furnish.

### Future is Bright

Summed up in brief we find a country the vastness and richness of which is almost beyond conception; a country abounding in wealth of mineral resources undreamed of, with agricultural and pastoral land unsurpassed any-



where in the world, with natural oil supplies of gigantic value, with timber resources almost unparalleled, with fisheries so abundant as to be unbelievable and a perfect hunter's paradise for skins and furs of the greatest value.

Where can any other country be found which will provide all these treasures and which only requires lifting out of itself to become one of the most potential assets in the

whole world's trade?

This process of elevation can be but gradual and will only be accomplished by educating the masses, by close study of their manners and characters, by gaining their confidence, by making friends, by assistance both moral and financial in developing the natural resources of the land, and the latent mental ability which is at present lying dormant from centuries of oppression.

The fatal year 1914 saw not only alterations to the map of Europe but the re-birth of the whole world. Siberia, in her new birth, has all the infantile complaints to overcome, and when she casts aside the swaddling clothes and ultimately attains the dignity of long pants then will she get rid of the many conflicting elements that are now so prejudicial to her progress and become what nature originally predestined her to be.

### **JAPAN**

#### Steamer Routes

The coasting and overseas service of the Japanese mercantile marine is reaching a high stage of development. Where Japanese interests exist at foreign ports, and public enterprise has found it impossible to develop and maintain regular service, the Japanese government has subsidized lines of steamships so that at present regular and reliable communication can be made between Japan and almost every country of the globe in Japanese bottoms. The largest steamship company, the Nippon Yusen Kaisha, trades between Japan and Victoria, Vancouver, Seattle, and Tacoma; from Japan to European ports through the

Suez Canal; in addition a separate service is maintained to European ports across the North Atlantic, seeking the home port again via the Panama Canal and the Pacific Ocean, thus providing a round the world service. A similar service is provided by the Osaka Shosen Kaisha, going in the first instance to South African ports from Singapore, and from South Africa to South America, thence through the Panama Canal to San Francisco and across the Pacific to Japan. The Nippon Yusen Kaisha and its sister line, the Osako Shosen Kaisha, both maintain regular service from Japan to and from Australian ports, the former company having within the last few months decided to extend its services to New Zealand ports. In addition to the services mentioned the Osako Shosen Kaisha maintains a regular service to Puget Sound and San Francisco. Another large passenger line, the Toyo Kissen Kaisha, runs regularly from Japan to San Francisco via Honolulu, and has also a South American service, running via these ports to points on the West Coast of South America, as far south as Valparaiso.

The coasting services of Japan cannot adequately be dealt with in a volume of this size. It must suffice to say the largest steamship companies of the Japanese Empire are in close and constant connection with such ports as Vladivostok, Chosen ports, Shanghai, Hongkong and indeed, all ports of any standing and importance in Chosen and China, by regular coasting services. The principal lines are under the management of the Nippon Yusen Kaisha and the Osaka Shosen Kaisha, any local agent of either company being able to provide full information.

Ports: Hakodate, Karatsu, Kobe, Kushiro, Kutchinotsu, Miike, Moji, Muroran, Nagasaki, Nagoya, Niigata, Osaka, Otaru, Shimonoseki, Wakamatsu, Yokkaichi, Yokohama,

Population: 53,000,000; 342 persons per square mile. Area: 147,655 square miles.

United States Consulates at: Dairen (Manchuria), Kobe, Nagasaki, Seoul (Chosen), Taihoku, Yokohama, Hakodate, Embassy at Tokyo.

## CERTIFICATE OF ORIGIN, JAPAN

Fac-Simile of Certificate of Origin for Japan

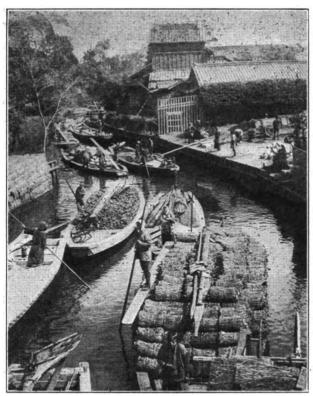
# DECLARATION AND OATH AS TO AMERICAN PRODUCTS OR MANUFACTURES EXPORTED TO JAPAN

\*Insert here "partner" or "manager," etc., according to the fact.

‡Insert here "products" or "manufactures," according to the fact.

†Insert here "shippers," "owners" or "manufacturers," etc., according to the fact.

. Marks	Nos.	Packages		or Weights	or Manufacture	Shipment	Shipment
UNITED S	TATES O	F AMERICA	· )			·	
State of County of City of	• • • • • • • • • • • • • • • • • • • •		[				
of	office of the office J.	e above description above mentice of said articles to before me	City ibed articles, S, that all thoned in the Us is true to	of	swear that I am* State of  Exercise the port of  Exerc	State of and bona fide in all other	U. S. A & Co., of de the ‡
his (L. S.)					(Signature of p		declaration.)



Traffic on the Shiba Canal Between Tokye and the Saa Copyrighted by Underwood & Underwood

Japan imports from the United States and its possessions cotton, hemp, iron bars, rods, plates, sheets, pipes, tubes, tinned plates machinery and engines galvanized iron, sugar, tobacco, and wheat.

The leading exports of Japan are bamboo manufactures, braids (chip and straw), coal, copper (ingots, slabs, plate iron), manufactures of cotton, fish (dried and salted), fruits and nuts, glass, hats and caps, machinery and parts, matches (in which an enormous trade is being developed with the United States), rice, silk and manufactures of sugar, toys and numerous other small articles.

### Japan's Seven Months Trade

Total exports and imports of Japan for seven months ended July 31, 1918, were 2,006,889,116 yen (a yen equals \$0.498 United States coinage, and is divided into 100 sens or cents) as against 1,372,988.524 in the similar period of 1917, a gain of 32%. But excess of exports fell from 321,621,000 yen in the earlier period to 59,024,000 yen in the latter one.

Gold exports were only 105,000 yen, a decline of 90,228,000 yen. On the other hand specie imports for the seven months stood at only 824,000 yen, a loss of 241,922,000 yen. In the following table principal commodities only are

shown: Exports—Seven Months of 1917-18

•	1918, yen.	1917, yen.
Beans and Peas	34,798,000	17,272,000
Tea	8,145,000	6,290,000
Sugar, refined	10,876,000	14,031,000
Waste silk	12,270,000	7,478,000
Coal	18,460,000	14,505,000
Raw Silk	179,042,000	171,641,000
Cotton Yarns	82,976,000	56,263,000
Copper, ingot and slab	23,774,000	60,772,000
Zinc	7,942,000	15,356,000
Matches	16,597,000	12,578,000
Silk manufactured	37,177,000	25,931,000
Cotton tissues	114,533,000	63,143,000
All others	486,366,000	382,045,000
Total exports	1.032,956,000	847,305,000

### Imports-Seven Months of 1917-18

Rice	31,428,000	3,589,000
Beans and Peas	12,691,000	4,923,000
Sugar	10,743,000	1,594,000
Hides and Skins	7.027.000	3,164,000
Oil-cake	61,037,000	35,473,000
Cotton, raw	351,083,000	184,709,000
Hemp and jute	10,313,000	8,567,000
Wool	42,696,000	27,255,000
Coal	8,003,000	3,786,000
Iron, pig, ingot	27,448,000	10.611.000
Iron, bar, rod etc	131,891,000	65,957,000
Iron pipes and tubes	8,382,000	3,628,000
Construction material	11.858.000	3,463,000
Petroleum	4,973,000	2,739,000
Cotton tissues	4,417,000	1.762.000
Woolen tissues	6,918,000	3,133,000
All others		
All others	243,924,000	161,330,000
Total imports	974,832,000	525,683,000

### Japanese Tea Exports

A report published by the Yokohama and Tokyo Foreign Board of Trade gives the following statistics of the export of tea from Japan during the past season, from May 1, 1917, to April 30, 1918: From Yokohama and Shimidzu, 37,940,300 pounds; from Kobe, 1,038,491 pounds; and from Yokkaichi, 3,099,265 pounds; making a total of 42,078,056 pounds. The destinations were: To United States, 35,018,140 pounds; and to Canada, 7,059,916 pounds.

During the first four months of 1918, of the 17 articles imported into Japan in which the United States is large enough to classify, over 50 per cent of the total imports in nine came from America. Of the remainder, two show over 30 per cent from the United States, one over 20 per cent and two over 10 per cent.

Trade of the United States with Japan leased territory in China for the ten months ending with October, 1918, showed a gain of over \$2,000,000, according to statistics compiled by the National City Bank. The total for 1918 was \$5,780,000 against \$3,624,000 in the same months of 1917, and \$922,000 in the corresponding months of 1916. The principal exports to this territory were boots and shoes, certain lines of machinery and various manufactures.

The value of merchandise imported from Japanese China during 1918 is, in round numbers, \$25,000,000 against slightly less than \$10,000,000 in the same months of 1917, and a little over \$1,000,000 in 1916. The chief products exported were soy bean oil.

Japan is an insular empire embracing all the islands off the east coast of Asia between the Philippines in the south and the peninsula of Kamchatka in the north. It thus includes Formosa (ceded by China in 1895), the Riukiu (Lu-chu) and Bonin Islands in the south, and Yezo and the Kurile Islands in the north; but these are all to be



Japanese Human Tractor, which is the usual way Goods are Hauled

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regarded as Japanese dependencies. Japan proper being made up of the three main islands of Honshiu, Hondo or Nippon, Shikoku, and Kiushiu, between 411/2 degrees and 31 degrees North, in a latitude accordingly corresponding to that of the eastern part of the Mediterranean region from the south of Bulgaria to the shores of the Nile Delto It is these islands that contain the great bulk of the Japanese population, and these only which are represented in the Japanese parliament.

Approximately 12,000,000 persons live in cities of over

10,000 inhabitants, and the remaining 41,000,000 reside in the towns and villages where most of them are engaged

in the farming industry.

Fully twenty-five per cent of all the men working in the factories are employed by the government, which has a monopoly in tobacco, matches, salt, and camphor. The government also operates 857 of the railroad lines and controls the telegraph and telephone.

Conditions and treatment of employees is considerably better under the government than under private employ-ers. However, labor is practically unorganized and trade unions are unknown, and in consequence long hours and low wages prevail everywhere. There is an absence of a permanent class of skilled laborers, and women are chiefly employed in the various factories. Upwards of a million men capable of industrial occupation perform the tasks ordinarily delegated to horses and mechanical traction in great manufacturing nations.

The entire group of islands are volcanic, containing upwards of 50 active, besides numerous extinct volcanoes. Like other high volcanic regions it is much subject to earthquakes, which often do immense damage The surface is extremely irregular and though the passes are low relatively to the height of many of the mountains the slopes are generally steep. This has proved a hindrance in the construction of railways. Not till 20 years after the opening of the first line of railway in the country (1872) were there two lines connecting opposite sides of the main island. Now railways serve all parts of the country.

The productive area of Japan is limited by the very irregular character of the surface. Less than 30 per cent of the surface is reckoned as productive, and about 12 per cent (less than one-eighth) of the entire surface is devoted to agriculture; but as Japan lies unlike the Medi-terranean region, in an area of summer rains, it is enabled notwithstanding its severe winters to maintain on this relatively small area an extremely dense population. All the plains and terraced mountain slopes are capable of yielding rice. By far the most densely peopled area is that round the Bay of Osaka, together with the strip stretching westwards along the north shore of the Inland Sea and the valley running north from Osaka to Kyoto.



Intensive Farming



Women Heading Barley Through Iron Combs Copyrighted by Underwood & Underwood

Besides rice, the principal food crops are wheat, barley and sova beans. Mulberries, from which are obtained the principal export product of the empire, silk, are planted in more than three-fourths of the provinces, everywhere in rows, allowing of space for other crops between. Tea prepared for export as green tea, is grown chiefly between latitude 34 degrees north and 36 degrees north; that is, in the south of Honshiu; and the lacquer tree, that is, the tree that furnishes the material employed in lacquering, one of the most celebrated of old Japanese industries, is cultivated mainly in the northern part of the same island, between 37 degrees and 39 degrees north. Camphor, which forms one of the more important among the minor exports of Japan, is also one of the ingredients used in the art since that substance serves as a diluent for the lacquering material.

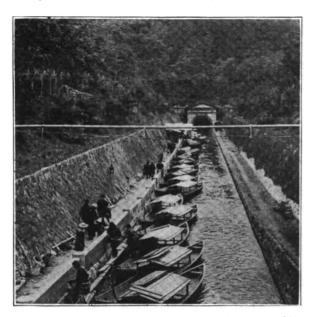
Of the minerals of Japan the most important is coal, the production of which is rapidly increasing. On the island of Yezo alone the area of coal is two-thirds as much as the area of coal of equal thickness in the British Isles, and a railway has been laid for the purpose of bringing the coal to the coast. Still more favorably situated are the coal mines in the northwest of Kiushiu, near Moji, and the southwest of the same island, at and near Nagasaki. The iron ores of Japan are for the most part not easy of access, but with the view of making itself independent of foreign supplies for defensive purposes the Japanese government has spent more than ten million dollars in establishing iron and steel works at Wakamatsu on the north coast of Kiushiu, at the western entrance to the straits of Shimonoseki, within 20 miles of both coal and iron mines. Copper and antimony are among the Japanese exports. The copper ores of Ashio or Ashiwo, near Nikko, north of Tokyo, are of high grade, and are now produced in large amounts. The production of silver is also important. Abundance of kaolin furnishes the raw material for the ancient and celebrated porcelain industry of the country.

The first native steamship company was established in 1874. Magnificent Japanese vessels are now seen in all waters, and since the inland navigation of Chinese rivers was thrown open to foreigners the Japanese have been acquiring a larger and larger share of the trade. Machine cotton-spinning factories have been established with great success, chiefly since 1882. Cotton weaving mills have followed. In Japan, as in China, winter garments are often padded, but among the upper classes, and even among the richer trades people, the use of European woolen garments is coming more and more into favor, and successful efforts have been made to establish woolen manufactures with modern machinery in the country. Paper mills of foreign type have also been set up; and a striking illustration of the power of Japan to compete with Europe in manufacturing industry has been furnished in the match trade. Japanese matches, made by foreign machinery, are now supplanting Swedish in the United States, China, and even in Siam and the Straits Settlements. Japanese exports of all kinds are increasing rapidly. It is significant that among the most rapidly growing imports are sugar, flour, beans, peas and other articles of consumption, besides woolens. Wages have also risen considerably, and though prices of commodities have generally also risen they have not risen in the same proportion. There are about 1,000,000 hands employed in the 15,000 factories of Japan.

#### Railroads

The aggregate mileage of railway lines in Japan proper amounts roughly to 6,000 miles, of which 5,217 miles are owned by the Imperial Government Railways and 768 miles by private corporations. Japan's railway development since its inception in 1872 has been steady and significant, all the more remarkable in view of the geographical nature of the country. At the outset, railway construction was chiefly in the hands of the government, but after 1887 private capital was encouraged to undertake this new enterprise, so that at the end of 1899 the private companies numbered more than 30. In time this divergent ownership and management gave rise to various drawbacks, such as the lack of systematic workings. The question of nationalization began to receive the serious attention of both the government and general public.

At last after years of investigation, the plan matured and in the two years of 1906 and 1907 the government bought 17 leading private lines of some importance. The total government lines on the completion of the railway nationalization extended 4,371 miles, about three times their former length, 1,508 miles, while the invested capital grew from Y170,000,000 to Y700,000,000. Since then the construction of the government lines has been steadily pushed on and even comparatively remote districts are being provided with facilities of railway connection.



Entrance to Biwa Canal, Near Kyeta, Showing Tunnel Through a High Mountain—Copyrighted by Underwood & Underwood



Tea Pickers at Work-Copyrighted by Underwood & Underwood

The railway lines in Japan proper are of narrow gauge, but the Railway Management is doing its best to effect innovation in passenger and other service in the matter of comfort, speed, and safety, as far as circumstances permit. Frequent express and through trains are run on trunk lines, not only in the Main Island but also in Kyushu and Hokkaido, while a once-a-day fast train-de-luxe with an observation parlor car connects Tokyo and Shimonoseki for the convenience of through passengers to or from Chosen. Then the Government Railways operate ferry services between Moji and Shimonoseki, Aomori and Hakodate, and other short launch services, in order to effectually carry out through connection by rail.

Through traffic arrangements exist between Japan and foreign countries. There is on one hand, the through traffic of passengers and their luggage to and from those neighboring lands overseas, such as Chosen (Korea), North and South Manchuria, Russian Maritime Province, and China and farther afield and from European Russia, and West Europe over the trans-Siberian route, while on the other, arrangements have been made for the issuing of interchange tickets by land and sea with the chief trans-Pacific and Suez steamer lines, with a view to passengers breaking the monotony of sea voyage by overland journeys in Japan. The year 1913 saw the opening of through traffic of goods with North Manchuria and Russian Maritime Province, and the shipping of through goods can now be effected to all Far Eastern points by these and other arrangements.

### Japan Harbor Regulations

Art. 1. The limits of the undermentioned ports open to foreign commerce are defined as follows:

At Yokohama: The harbor limits are comprised within a line drawn from the Juniten (Mandarin Bluff) to the lightship, and thence due north of a point on the coast east of the mouth of the Tsruumigawa.

At Koko. The harbor limits are comprised within the area bounded by two lines, one drawn from the former mouth of the Ikutagawa due south, and the other running in a northeasterly direction from the point of Wadano-misaki.

At Niigata: The harbor limits are comprised within the arc of a circle, the center being the lighthouse, and the radius being two and a half nautical miles.

the radius being two and a half nautical miles.

At Ebisuminato: The harbor limits are comprised within a line drawn from Shiidomarimura to Isori-mura on the outside and a line drawn from Minotocho on the east shore of Lake Kamo to Kamomura on the northwest shore of the same lake.

At Osaka: The harbor limits are comprised within a line drawn from a point (Tree Point) at the mouth of the



Street Scene in Kebs

Mukogawa south by west, and a line from the mouth of the Yamatogowa, the two lines cutting each other at a distance of six nautical miles from a point (Tree Point) and five nautical miles from the mouth of the Yamatogawa.

At Nagasaki: The harbor limits are comprised with a line drawn from Kanzaki to Megami.

At Hakodate: The harbor limits are comprised within a line drawn from a point off the coast, half a nautical mile south of Anoma Point, to a point on the east bank of the mouth of the Arikawa, Kamil-so-mura.

Art. II. Every vessel on entering a port shall hoist its ensign and its signal letters. Regular mail packets may hoist the company's flag in lieu of the signal letters.

The ensign and signal letters or company's flag must not be lowered until the vessel's arrival shall have been

duly reported to the harbor master.
Such report shall be made within 24 hours after arrival, Sundays and holidays excepted, and no customs facilities shall be extended to any vessel until such report shall have been made.

Art. III. Every master on arrival in port shall prevent all communication between his ship and other vessels or the shore until it shall have been admitted to "free pratique.

Art. IV. The harbor master's boat will be in attendance near the entrance of the harbor, and the harbor master will assign a berth to every ship on entering which berth it must not leave without special permission unless forced to do so. The harbor master may cause a vessel to change its berth, should he consider it necessary.

Art. V. The harbor master shall always wear a uniform when on duty and his boat shall carry a flag of the pat-

tern prescribed.

The harbor master may at any time satisfy himself that his directions as regards anchorage, the movements of ships and the proper conditions of moorings are carried

Art. VI. No vessel shall anchor in the public fair-way or otherwise obstruct free navigation. Vessels which have run out jib-booms shall rig them in at the request of the harbor master, if they obstruct free navigation.

Art. VII. Every vessel either at anchor or under weigh within the harbor limits shall carry between sunset and sunrise the lights required by the laws, ordinances or orders relating to the prevention of collisions at sea.

Art, VIII. When bad weather threatens or warning signals are exhibited vessels shall immediately get ready one or more reserve anchors; and steamships shall, in addition, get up steam.

Art. IX. Any vessel carrying explosives or highly inflammable materials in excess of ordinary requirements shall come to outside the harbor limits and there await the harbor master's orders. Such vessels while so waiting shall, between sunrise and sunset, fly from the foremast head the signal letter "B," and between sunset and sunrise shall hoist in the same place a red lantern.

No vessel shall ship or discharge any such materials except at such places as the harbor master may indicate.

Art. X. Every ship which is laid up or undergoing repairs, and all yachts, store-ships, lighters, boats, etc., shall be moored in special berths designated by the harbor

Art. XI. In case of fire breaking out on board a ship within the harbor limits, the ship's bell shall be rung until the arrival of assistance, and the signal letters "N M" shall be hoisted between sunrise and sunset or a red lantern shall be continuously hoisted and lowered between sunset and sunrise.

If police assistance be required the signal letter "G" shall be hoisted between sunrise and sunset, and between sunset and sunrise blue or flash lights shall be shown.

All discharging of fire arms or letting off of fireworks within the harbor limits is forbidden without the permission of the harbor master except in such as abovementioned for the purpose of signaling.

Art. XII. Any vessel arriving from a place which has been declared by an official declaration of the Imperial Government as being infected with an epidemic or contagious disease (such as cholera, smallpox, yellow-fever, scarlet-fever, or pest) or on board of which any such disease shall have occurred during the voyage, shall come to outside the harbor limits and shall hoist a yellow flag at the foremast head between sunrise and sunset, and shall show a red and a white light one above the other in the same place between sunset and sunrise. Such vessel must undergo inspection by the proper sanitary authorities.

The sanitary authorities shall, on approaching the vessel, be informed whether any cases of any such diseases have actually occurred during the voyage and the nature of the diseases in order that suitable precaution may be taken.

The said ship must not lower the yellow flag or the above mentioned lights until it shall have been admitted to "free pratique;" neither shall any person land from it nor shall any communication be held with other ships without the permission of the proper sanitary authorities.

The provisions of the preceding paragraphs apply to vessels anchored within the harbor limits on board of which any of the above mentioned epidemic or contagious

diseases have broken out,



Girls Enameling Cloisonne for Export Trade Copyrighted by Underwood & Underwood Digitized by Google

Such vessels must change their berth on receiving order to that effect from the harbor master.

Any vessel arriving from a place infected with cattledisease or on board of which such disease has broken out during the voyage shall not land or tranship either the cattle, their dead bodies, skins, hides or bones, without the permission of the proper sanitary authorities.

Art. XIII. No carcasses, ballast ashes, sweepings, etc., shall be thrown overboard within the harbor limits.

Whilst taking in or discharging coal, ballast or other similar materials, the necessary precautions shall be taken

to prevent their falling into the sea.

If any materials detrimental to the harbor shall have been thrown into the sea or shall have been allowed to fall in through negligence by any ship they shall be re-moved by the ship upon receipt of an order to that effect from the harbor master; and if not so removed the harbor master may cause them to be removed at the ship's exnense.

Art. XIV. Any ship intending to leave port shall give notice at the harbor master's office and hoist the Blue

Peter.

Steamers which have fixed days of departure need only make one declaration on their arrival and departure.

Art. XV. All wreckage or other substances which obstruct the public fairway in a harbor or its approaches must be removed by their owner within the time indicated by the harbor master. If this order is not complied with within the time specified by the harbor master, the harbor master may cause them to be removed or destroyed at the owner's expense.

Art. XVI. A suitable and sufficient number of buoy moorings for regular mail steamers shall be provided by the harbor master's office. A prescribed fee shall be

charged for the use of such moorings.

Art. XVII. No chains, ropes, or other gear shall be attached to any lightship, signal, buoy or beacon.

Any vessel running foul of and damaging a lightship, buoy, beacon jetty, or any other structure shall pay the necessary expenses for repairs or replacement.

Art. XVIII. Any infringement of the provisions of

the present Regulations shall render the offender liable to a fine of not less than yen 2 and not exceeding yen

Art. XIX. The master of a vessel shall also be held responsible for any fines, fees or expenses which may be imposed or charged on or in respect of the vessel.

Art. XX. No vessel shall be allowed to depart until all fines, fees and expenses imposed or charged under these Regulations shall have been paid or until security therefor to the satisfaction of the harbor master shall

have been deposited with the harbor master.

Art XXI. The word "Harbor master" as used in these Regulations is also meant to include the harbor master's assistants and deputies; and by the word "Master" is meant any person in command of or having the direction of a ship, whatever his designation may be; and by the word "Port" or "Harbor" is meant any one of the ports or harbors enumerated in Article I of these Regulations.

Art. XXII. A portion of each harbor shall be reserved

as a man-of-war anchorage.

Art. XXIII. The only provisions in these Regulations which shall apply to men-of-war are those contained in Article IV, VI, VII, and XXI, and in the first and second paragraphs of Article XIII.

Art. XXIV. The time when and the localities where these Regulations are to come into operation shall be notified by the Minister of Communications. The Minister of Communications shall also issue detailed rules for the due enforcement of these Regulations.

### Seaports

Nearly all the chief towns of Japan are seaports. Tokyo, the present capital, is, however, accessible only to ships of small size, and its port is Yokohama, which has a safe harbor for vessels of any size. Osaka, the largest town in southern Japan and the chief seat of the cotton-spinning industry, which is here favored by the abundance of labor and the extent of the local market. suffers from the same drawbacks as Tokyo, but Kobe

and Hiogo, 18 miles distant on the same bay, have an excellent harbor. Kyoto, the old capital of Japan, lies inland about 25 miles from Osaka and seven miles from Lake Biwa. Nagoya, at the head of Isenumi Bay to the east, is an important manufacturing and commercial town noted for its porcelain and other artistic products, but is not accessible to sea-going ships owing to the silting up of the upper part of the bay. Nagaski, on the other hand, on the southwest coast of the island of Kiushiu, has an excellent harbor, and is now much frequented as a coaling station and has a large export of coal. It has large graving docks, a patent slip, and a ship-building yard with the most improved appliances capable of building several vessels at one time, machine shops, boiler works and founvessels at one time, machine shops, boiler works and toundries, and a technical training school in connection with these establishments. Deshima, an artificial islet close to Nagasaki, was the seat of a Dutch factory or trading station as far back as 1641. Niigata, the principal port on the west coast, has its shipping stopped for half the year by the strong surf that beats along the whole of this flat and dangerous coast during the prevalence of the winter monsoon. The principal harbors of Japan are Yo-kohama, Kobe, Osaka, Nagasaki, Hakodate and 32 smaller open ports. The bulk of the foreign trade is carried on through the first two named harbors.

Tonnage Dues: Vessels entering a Japanese port from a foreign country are required to pay tonnage dues of sen 5 (2½ cents) per registered ton or per 10 koku (49.60 bushels) of actual capacity; but by payment of sen 15 (7½ cents) per registered ton or per 10 koku, they are exempted from any further tonnage dues at the same

Customs Duties. On raw materials, practically all free; manufactured goods, from 15 per cent to 40 per cent. Articles of luxury, 50 per cent.

### **FORMOSA**

Ports: Keelung, Takao, Tamsui.

Formosa is traversed from north to south by a range of mountains which, along with the eastern plain, are inhabited by a semi-barbarous people. The inhabitants of the western plain are mainly of Chinese origin, but not of a high type. The chief exports are tea and camphor, the latter a government monopoly. The capital is Taipei, near the northern end, connected by rail with the port of Kilung or Keelung, which has an excellent anchorage, and near which are mines of good soft coal capable of being mixed with Welsh coal for use on steamers. Improvements are projected on the harbors of Anping and Takau on the west coast to promote the sugar industry, which is carried on in the neighborhood.

Formosa exported to the United States in 1917, 18,314,291 pounds of tea, valued at \$3,654,566; 5,089,000 pounds of camphor, worth \$1,923,578, and 29,523,000 pounds of sugar,

valued at \$1,330,046.

## **CHOSEN (KOREA)**

China

Ports: Chemulpo, Fusan, Jenchuan, Kunsan, Mokpo,

Chosen, the mountainous peninsula between the Yellow Sea and the Sea of Japan, like Tibet, was formerly a loose dependency of China, but in 1895, after a war between China and Japan, was declared independent, but was never really so. From 1905 it has been under the control of Japan, which annexed it in 1910. Of the Chosen ports opened to foreign commerce, the most important are Chemulpo on the west coast, Wiju, further north on the Yalu, Pingyang (or Phyong-yang) on the Tai-dong River in about latitude 39 degrees north, Fusan on the southeast, and Wonsan, or Yuensan, on Broughton Bay on the east coast.

Chemulpo is the port of the capital, Seoul, or Hanyang, with which it is now connected by rail. Seoul, a city of 217,000 inhabitants, is now lit by electricity and provided with electric tramways. Several other treaty ports are now opened, and trade is rapidly increasing. Ginseng, a drug highly valued by the Chinese, is exported as a monopoly of

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Brass Shen, Showing Primitive Mercantile Methods of Doing Business

the crown. The chief exports are, however, gold, beans and rice, live stock, hides, wheat, barley and iron ores. production of raw cotton is increasing, and seems likely to increase still more rapidly. The chief imports are cotton piece goods from England, the United States and Japan, and cotton yarns mainly from Japan. Hemp cloth, brassware and a high-grade paper are manufactured on a small scale.

There has been a decided increase in the value of the foreign trade compared with previous years. Figures compiled for June, 1918, show decided increase in the value of wrought iron, rails and accessories, machinery, coal, lumber, cement and paper as against the corresponding month of 1917. Exports were valued at 11,580,000 yen (1 yen=\$0.498), and imports totaled 10,520,000 yen. The gain in export over the previous month of June was 5,380,000 yen. Imports increased to the extent of 3,930,000 yen. The trade for the six months ending June, 1918, aggregated 57,920,000 yen in export, and 67,730,000 yen in import.

The exportation of rice to Japan showed an increase of 97,000 koku (1 koku=5.12 bushels) as against the shipments for June of the previous year. The exported rice was valued at 2,940,000 yen. Other marked increases were noted wrought iron, rails and accessories, machinery, coal, lum-

ued at 2,940,000 yen. Other marked increases were noted in the exportation of fish, ginseng, raw cotton, cocoons, copper ingots, sea weeds, soya beans, wheat flour and leather articles.

The exports of graphite from Chosen to the United States increased from 559 tons, valued at \$18,542, for 1916, to 829 tons, valued at \$36,480, for 1917.

Since May, 1917, and June, 1918, five new banks or branches of banks have been established. Two of the new banks are operated by Japanese and the remainder are under the management of Koreans.

### **CHINA**

Ports: Amoy, Canton, Chefoo, Chin-Kiang, Chin-Wang-Tao, Chungkiang, Foochow, Hankow, Hoihow, Ichang, Kiukiang, Kiung Chow, Nankin, Ningpo, Shanghai, Swatow, Tientsin, Tsingtao, Wu Hu. Steamer Routes

The port of Hongkong may be described as the metropolis of the Orient. Communication of all kinds can be had

from Hongkong to any port in the Orient, steamers coming and going daily. Regular passenger and freight sailings are maintained to and from Canada and Puget Sound by the Canadian Pacific Ocean Services, Ltd. The Nippon Yusen Kaisha and Osaka Shosen Kaisha also offer passenger services to Canada and Puget Sound, besides which there are the purely freight steamers operated by Alfred Holt & Co. (Blue Funnel Line), Frank Waterhouse & Co., and occasionally the Dollar Line. To San Francisco regular services are operated by the Toyo Kisen Kaisha, Pacific Mail S. S. Co., China Mail S. S. Co. and the Java Pacific Mail S. S. Co. cific Line, the local agents of all lines being readily traced in local directories.

Coasting services are maintained to Shanghai by Messrs. Butterfield & Swire; to Manila by Butterfield & Swire and the Jardine Matheson Co.; to Haiphong and other French-Oriental ports by A. Marty & Co.; to Canton and other up-river ports by river steamers, three or four leaving daily, and to Swatow, Amoy and Foochow by the Douglas S. S. Line. A local German service from Hongkong to many of the Pacific Islands under German protection was maintained at regular intervals before the war. In addition to the services mentioned the P. & O. Steam Navigation Co. and Messageries Maritimes (French Mail) and the Nippon Yusen Kaisha have regular services to Europe, as also had the North German Lloyd and Austrian Lloyd before the great war Australia is served by the Eastern Australian S. S. Co., the Nippon Yusen Kaisha and Osaka Shosen Kaisha, Bombay and Calcutta being catered to by the Indio China Steam Navigation Co. and British India Steam Navigation Co., Nippon Yusen Kaisha and the Osaka Shosen Kaisha. Many Chinese steamers are operated between Hongkong and other ports to the Straits Settlements, but these are not recommended for European passengers.

United States Consulates at Amoy, Antung, Canton, Changsha, Chefoo, Chungkiang, Foochow, Hankow, Harbin, Mukden, Nanking, Shanghai, Swatow, Tientsin, Tsingtao, Hongkong.

China's increase in foreign trade in 1917 totaled \$205,-886,740, distributed as follows: Shanghai, \$66,899,555; Darien, \$56,551,174; Tientsin, \$17,886,821; Kowloon, \$15,-087,371; Canton, \$12,321,873; Tsingtao, \$10,062,282; Hankow, \$10,454,276; Antung \$19,632,162.

### Shanghai Leads All Other

Shanghai's foreign trade amounted to 40 per cent of the total net trade of China and exceeded by \$48,838,883 the combined trade of Dairen, Canton, Tientsin, Kowloon and Hankow, the trade ports next in importance.

During 1917 there were a number of railway extensions made in China. A new section of the Canton-Hankow line between Wuchow and Yochow-140 miles-was completed with construction trains running into Changsha, 90 miles farther. The Szechang Railway in Manchuria, a branch of the Chinese Eastern Railway, has been completed from Szebingchian to Sabtsiankwo, and will be pushed on to Dzenchianton, a distance of about 62 miles. A short branch of the Peking-Mukden line was also completed.

This vast country is the only part of the mainland of Asia besides India with a population of high density. In this we see a result of the seasonal rainfall distribution. Though the winter temperatures are cool, even in the south, and in the north and most parts of the interior rigorous, the rains occurring, as in monsoon regions generally during the season of high temperatures promote an enormous vegetable production. The figures given for the population of China proper were formerly only vague esti-mates, but a recent census confirms the previously entertained ideas as to the high density of population in the greater part of the great plain in the east, which stretches from the mountains in the north of Peking to those south of the Yangszte. This plain thus extends, roughly speaking, through ten degrees of latitude, from about 30 degrees to 40 degrees north, and its greatest width is about the parallel of 35 degrees. It extends everywhere to the coast except in the province of Shantung—that is, "the Eastern Mountains"—the province which juts out between the Yellow Sea and the Gulf of Pechili. Another large and densely peopled plain lies on the middle Yangszte and the lower course of its great northern tributary, the Han.

#### Cultivate the Hillsides

Another region of high density is in the southeast, forming the province of Kwang-tung, which is largely composed of a deltaic alluvial plain. And in the west there is a third region of exceptionally high density of population in the east of the province of Sechwan and the north of Yunnan, where, besides great mineral wealth, there is a peculiar red soil of extreme fertility. Chengtu-fu, the capital of Sechwan, is a town estimated to possess a million inhabitants. West of the great plain China is for the most part elevated and to a large extent mountainous, but even the elevated regions are in some places capable of supporting a numerous population. This is so, for example, in the region of the red soil just referred to. Where that soil is found cultivation can be pursued to a great height up the mountains; and the Chinese in eastern Sechwan cultivate the hillsides wherever the slope is not above 30 degrees, which is about the steepest a man can walk up unaided by his hands.

The northern half of China again is covered, and vast hollows to a great depth filled, with a peculiar yellow soil known as loess, which is also of remarkable fertility, and rewards cultivation even at great heights. Ritchthofen, who has described this soil in great detail, states that in the region where it prevails he has seen a plateau at the height of 7,000 feet above sea level covered with fields and vil-This soil is light and easy to work, but it has one great drawback. Its productiveness, though often very great, is very uncertain. The soil is so porous that water runs through it with great rapidity, and crops are thus liable to suffer from drought unless refreshed with frequent showers or supplied with water by irrigation. And so it happens that a region which when rain falls with sufficient frequency yields the most abundant crops, may in other seasons have its crops entirely destroyed, though the rainfall may have been plentiful enough for soils of another kind. Irrigation, therefore, is practiced throughout this region wherever the structure of the ground admits of it, and lands that can be irrigated are in some places of 10 or 20 times the value of "dry" fields. Many parts of China are, like certain parts of India, pitted with wells like a sieve, every field having one.

### Mineral Wealth Enormous

Hitherto China has depended mainly on its agricultural resources, but its mineral wealth is known to be enormous.



Screening Rice



Passenger Chairs, Feechew Railway

The whole area of the coalfields of China is estimated to be perhaps twenty times as great as that of all the coalfields in Europe. These coalfields exist in many places where there is already a dense population, and much of the coal is of excellent quality. One coalfield about 75 miles northeast of Tientsin has long been worked on the European system, and has been connected by rail with a navigable river. Other small coalfields exist in the vicinity of Peking. A small coalfield, containing excellent bituminous coal, lies in the west of the mountains of Shantung. But the great coalfields of China lie further in the interior. The southern half of the province of Shan-si has enormous deposits both of anthracite and bituminous coal at the height of between 2,000 and 3,000 feet above sea-level. The southeast of this province forms one of the most remarkable mineral regions in the world. The anthracite here found is very pure. In superficial extent about 13,500 square miles, the deposit is the largest of the kind known to exist. While the average aggregate thickness of the coal scams is at least 40 feet, almost everywhere there is to be seen a seam of from 15 to 20 feet, mostly one from 20 to 30 feet in thickness.

So frequently does the productive part of the coal-field crop out on the surface, that along one line about 200 miles in length an opening might be made direct into a seam of great thickness anywhere. The stratification seems to be undisturbed, and in many places it is nearly horizontal. Along a line there crops out a scam of from 20 to 30 feet in thickness, with an easterly slope only just sufficient for drainage, and into this levels could be tunnelled for miles to the west, so that once a railway had been constructed to the surface of the plateau the cars could be run into the mines and loaded with coal for Peking or Shanghai direct. An outlying portion of this coalfield, known as the Chinghwa coalfield, lies at a lower level on the slope of the plateau in northern Honan. Moreover, this coalfield is rich in the most excellent iron ores, both in the north near Loping and in the south round Tsechou, as well as in potter's clays. In the southwest of the province are enormous deposits of salt. The whole of southeastern Hunan has been described as one enormous coalfield, and the same description has been applied to eastern Sechwan and northern Yunnan. Sechwan is also rich in salt and iron ore, and Yunnan remarkably rich in copper, to a less extent in silver, while there are important tin and other mines near Mengtse or Mongtse in the southeast of the province.

### Lack Adequate Transportation

The chief thing that has so far hindered the development of these resources is the want of adequate means of communication. Communications throughout the great plain of China are naturally easy. Inland navigation is carried on both by rivers and canals, and one





Coolles Coaling Railway Cars

great canal, 700 miles long, runs through nearly the whole length of the plain. Commencing at Hangchau, at the head of the inlet, to the south of the estuary of the Yangszte, it crosses both that river and the Hwang-ho, and terminates at Tientsin, on the Pei-ho, the inland port of Peking. It was constructed in the early part of the seventh century, and is still a fine waterway as far as about 35 degrees north, but to the north of that its navigation is much impeded. North of the Hwang-ho the Pei-ho and its numerous feeders in the plain of Chili or Pechili afford considerable facilities for water carriage.

Navigable rivers facilitate the communication between the great plain and the province of Kwang-tung. Two streams, each navigable nearly to its source, leading on different sides up to an easy mountain pass, called the Meiling Pass, on the northern frontier of the province named, connect the provinces of Kwang-tung and Kiang-si (the route from Canton to Kiukiang); and two others similarly connect Kwang-tung through Hunan with Hupe (the route from Canton to Hankau).

Between the east and west of China, however, communication is not so easy. Three great rivers, the Hwang-ho or Yellow River in the north, the Yangszte in the middle, and Si-kiang or West River in the south, cross the country from west to east, but only the second of these is of great service for navigation. The Hwang-ho, well called "China's sorrow," is too rapid, too much obstructed by shallows, and too shifting in its course to be easily navigated. Its navigation is wholly interrupted in the easterly part of its course in northern Honan, and again on the greater part of its course on the western frontier of Shansi, where it plunges through a profound chasm; and, on the other hand, it is liable to cause terrible destruction by sudden changes of its bed in its course through the plain. At certain periods it has entered the sea by a northeasterly course to the Gulf of Pechili, at others by a southeasterly course to the Yellow Sea. By a change of this nature in September, 1887, at least one million human beings are estimated to have perished. In January, 1889, the river was again brought back to its previous course by which it entered the Gulf of Pechili.

The Yangszte is an admirable watercourse as far as the town of Ichang in about 111½ degrees east—that is, for above 1,000 miles from its mouth. Thus far steamers can ascend, and even ocean-going steamers can reach as high as Hankau, 680 miles up, and there get loaded with tea and other products for Europe and the United States. Beyond Ichang, however, a series of difficult rapids impede the navigation for about 400 miles; and as the mountain tracks between Ichang and Chunking, the great river port of Sechwan, are likewise extremely difficult, that rich province is in a large measure shut off from communication with the great

eastern plain. Such commerce as is maintained with this region mostly follows the river route.

### Tow Boat Overcomes Difficulties

Four hundred miles north of Ichang is the important river port of Chungking and it is from this port the greater part of the junk cargoes are shipped to Ichang. Between Ichang and Chungking the Yangszte is in many places a narrow, swift and turbulent stream, filled with rapids, rocks and other perils. Its many dangers to navigation have made the employment of steamboats such a risk that until 1913 only one firm, a German company, had the courage to undertake it. This company built a steamboat believed to be suitable for the work. She cost \$125,000. She was a total loss the first trip and out of her 207 passengers and crew only four were saved. In 1914 Captain Plent, with Chinese backing, built a tow boat, with a lighter, and this plan solved many secrets of upper river navigation and made big profits for the owners. In 1916 the same company built a river steamboat for the same route, having a tonnage of 300, a length of 190 feet, seven feet extreme draft and engines capable of driving her against ordinary currents at a speed of 16 kncts.

The first season's work enabled her to declare a dividend of 75 per cent and this dividend was, under the Chinese "squeeze" system, no more than a small part of her net profits.

Some idea of the magnitude of the commerce to be handled is shown by the fact that engaged in the trade of carrying merchandise of various kinds from Chungking to Ichang no less than 10,000 junks are each year registered with the government. They have an average carrying capacity of 60 tons and carry crews of approximately 30 men, and in addition to these men each junk employs a force of about ten shipwrights to repair damage sustained en route. At parts of the river, the motive power of the junks is supplied by men called "trackers," whose duties are to tow the junk through the powerful currents and eddies and each junk requires at certain points no less than 150 of these workers.

The third of the great rivers above mentioned, the Si-kiang, is navigable more or less for the greater part of its course, but rapids impede the navigation at many places. These hindrances, however, are not of the same consequence commercially as those which occur in the course of the Yangszte.



Chinese Type



Twelve-Year-Old Boy Carries Two Sacks of Rice

But even at their worst the rivers of China are better than any other means of inland communication. Clumsy carts are used in the north, but in the south there are comparatively few roads fit for wheeled vehicles. In general the cost of land carriage by any method appears to be upwards of 15 cents per ton per mile, or about 20 to 40 times as great as on a river of easy navigation, a cost which must obviously confine to narrow limits the amount of traffic in bulky commodities. But the modern means both of production and transport have hitherto been regarded by the Chinese authorities with noted dislike, chiefly, it would appear, from dread, partly from contempt, of the foreigner. All schemes for the extension of foreign trade in China have to overcome the resistance arising from this dislike, and special difficulties in doing so have to be encountered in consequence of the peculiar character of the Chinese government, which may probably be regarded as in a large measure the result of the remarkable geographical isolation of the country.

#### Buys Railroad to Tear It Up

At first the official feeling was strongly opposed to railways. The first railway in China was a short line from Shanghai to its outport Wusung, opened in 1876, but it was purchased by the viceroy of the province and torn up in the following year.

Afterwards a railway was laid from the Kaiping collieries east of Peking to the mouth of the Pei-ho, and at a later date from this latter point to Tientsin. The continuation of the Kaiping line northeastwards to Manchuria was afterwards encouraged by the government for strategic purposes. In 1897 Tientsin was connected by rail with Peking, and railway concessions have since been obtained with less difficulty. As soon as introduced both telegraphs and railways have always been eagerly made use of by the people.

Commercial competition has led to the adoption of other American and European inventions. The increasing production of silk in Europe and Japan has induced Chinese producers to adopt silk-filatures, and the competition of India and Ceylon in tea has caused some Chinese growers to introduce leaf-rolling machinery. Cotton mills equipped with latest machinery and conveniences have been erected at Shanghai, Hangchau, Ningno, Wenchau, and elsewhere. Extensive iron and steel works have been established by the viceroy of the Hukwang provinces (Hupe and Hunan)

at Hanyang. Chinese students are making themselves acquainted with western science and learning in Europe, the United States and Japan, as well as at colleges in their own country (such as the Nanyang college at Shanghai and one at Tientsin), and an active and widespread native press is tending to bring about the same result

Increased facilities for commerce were given in 1898 by throwing open the navigation of the inland waters of China to foreign vessels, though the value of this concession was greatly diminished by the harassing regulations afterwards issued. In 1902 an important treaty was concluded between China and Great Britain, by one provision in which it is hoped that the internal customs duties on foreign goods, known as likin and by other names, at present levied at numerous inland by other names, at present levied at numerous inland barriers, will be entirely abolished. Under this treaty it is provided that from January 1, 1904, likin and all other taxation on foreign goods shall be abolished in consideration of goods of an import duty amounting in all to 12½ per cent, instead of the 5 per cent duty at present in force. Native customs houses are, however, still to remain, both on the coast and in the interior for the taxation of native goods not intended interior, for the taxation of native goods not intended for export, and the Chinese government reserves to itself the liberty to recast the foreign export tariff so far as practicable with specific duties on a scale not to exceed 5 per cent ad valorem, with a surtax of 2½ per cent in substitution for likin and all other internal taxation. Another important provision is the clause equalizing the duty on goods carried by junks and sailing vessels to that on goods carried by steamers. It is also provided that an excise duty equivalent to double the import duty at present levied is to be charged on all machine-made yarn and cloth manufactured in China whether by foreigners at the treaty ports or by Chinese anywhere in China, but this stipulation is not to apply to the Hanyang ironworks and other similar government works at present exempt from taxation, arsenals, government dockyards, etc. China also agrees to establish a national currency.

### Geographical Conditions Will Affect Future

It is probably safe to say that there is no country in the world in which the consequences of the extensive introduction of railways and machinery are likely to be more momentous. When we consider the nature of the climate, favorable at once to energy in the people and productiveness of the soil, the nature and extent of the undeveloped resources, the great density



Coolies Coaling a Steamer

of the population, the advanced state of civilization, and the character of the inhabitants, who are distinguished not merely by the most assiduous industry but by a high degree of business capacity including remarkable fidelity to their pecuniary engagements, we may fairly anticipate much greater results from the introduction into China of western methods of production and transport than those which we have witnessed in India. It is therefore worth while to look at some of the geographical conditions that are likely to affect the ensuing development.

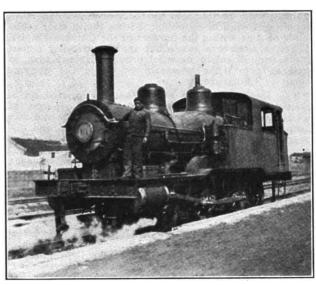
First, we must note that this development is sure to be to a large extent of an industrial character. The unutilized resources with which China is so lavishly provided are those which furnish the means for carrying on industries of the modern type. This must lead, as it has done in other parts of the world where similarly favorable conditions exist, to a rapid multiplication of population on the coalfields. This population will be dependent on supplies of foodstuffs brought from elsewhere, probably from a distance, and it is extremely doubtful whether China itself will be able to meet this demand. The agricultural resources of China proper, if we may judge from the great density of the population, would already appear to have been utilized to the utmost. China already imports considerable quantities of rice, grain, and flour, and it is significant that these commodities are still admitted duty free.

A disturbance of the present conditions of industry is certain to ensue, and this disturbance will be the greater the more rapidly the development goes on. Many countries are likely to be affected thereby, some in one way and some in another, and it is scarcely possible to foresee how far they are likely to be affected favorably, how far otherwise. But the greatest effects will be in China itself. There, with all the benefits likely to follow from the industrial development and the improvements in the means of communication, large numbers of the population are likely to undergo the same hardships and struggles as have been endured elsewhere, while old domestic industries were dying out and changes were taking place in the centers and routes of trade. It is probably the anticipation of this that has led to the provision for the taxation of machine-made products in China in the treaty of 1902.

The countries and regions favorably situated for supplying the future industrial population of China with foodstuffs will no doubt receive an important stimulus to settlement and production. The already



High-Class Lady Boarding a Train



Type of Lecomotive Used in China

developed industrial countries of the world cannot fail to have some of their industries stimulated, and perhaps unduly, for some at least are likely to encounter at a later date severe competition in the country from which the stimulus proceeds. But that industrial China will ever overwhelm the world with its products, as some appear to think possible, is surely a vain alarm. "People," says Mr. H. Brenier, formerly director of the Lyons commercial mission to China, "appear to think that we are going to put into the hands of the Chinese the powerful instruments of production which they lack, and that all the other conditions, which at present constitute a part of their advantages—low wages and a low standard of living, etc., will remain the same. That is opposed to experience." Efficient labor is indeed at present cheap in China, but its price is bound to rise when its total efficiency has been increased with the aid of machinery, just as surely as it has done in Japan, and probably more rapidly. Details of life in China such as are given in the work already referred to make it hardly credible that improved means of production should not lead to the speedy growth of demands for a higher scale of living

### Shan-si Coalfields Most Important

Of the regions likely to be rapidly developed in the near future the most important is the coalfields of Shan-si, and it may be pointed out that if a railway through this coalfield were provided with northern connections, it is probable that a great deficiency among Chinese products would be supplied by a railway following this route. In China proper, there are very few sheep, and few animals of any kind yielding wool. Hence 'woolen garments are scarcely worm. But it must be remembered that the winter climate of a large part of China render the use of warm clothing necessary. According to the present habits of the people, while cotton, China grass, or silk furnishes the material for the summer garments, the winter clothing of the rich consists largely of furs, that of the poorer classes of cotton padded and quilted. There can hardly be a doubt, however, that if woolen garments were sufficiently cheap they would form a suitable winter wear, and might in time come to be preferred to the padded clothes now worn. Now any northern branches of the railway at present under consideration would pass through a region thinly peopled indeed, but well adapted for sheep rearing, and we have the example of Australia and the Argentine Republic to show us how rapidly a large trade in wool can be developed under suitable circumstances by a scanty population. It is not unlikely, therefore, that the establishment of cotton mills in the northern parts of

China would be followed by the rise of woolen mills, supplies of wool being obtained from the interior table-lands of Asia within the borders of the Chinese Empire. There is already a small but rapidly growing export trade from Tientsin in wool brought from Kansu, as well as across the mountain passes in the extreme north of China proper.

The foreign trade is almost entirely carried on at certain treaty ports, which are the sole places at which foreign merchants are allowed to reside and own property and foreign vessels allowed to load and discharge. Of these there are now upwards of 30. They now include all the chief seaports of China and most of the principal river ports, and a few inland places. The seaports are most numerous on the southeast coast of China, where the numerous indentations form a number of excellent harbors.

#### Ports

By far the most important is Shanghai, the great port of the Yangszte, the most extensive and productive natural region of China. Its importance is increased by the great lack of seaports in the part of China lying north of the Yangszte, the coast line there being mostly low and uniform, like that on the east of the Indian Peninsula. The mountainous Shantung Peninsula is indeed more favored, but the harbors there are too far from any important hinterland to acquire any great trade with the imperfect communications at present in existence. In consequence of these conditions Shanghai serves as the great entrepct, not merely for the minor Yangszte ports, but for all northern China. Shanghai lies, however, not on the Yangszte itself, but on a small tributary known as the Wusung or Hwang-pu, at the mouth of which is a bar preventing vessels of more than 24-feet draft from reaching Shanghai even at high water spring tides. Larger vessels are compelled to discharge at least part of their cargo at the town of Wusung. The port is provided with excellent graving docks, foundries, forges machine shops and engine works under European management.

The river ports of the Yangszte have their importance determined at present by the extent and productiveness of the hinterlands opened up by waterways, and from the structure of the country it is probable that the introduction of railways will not greatly alter their relative rank. Chinkiang derives considerable importance from its situation near the junction of the Imperial Canal. But no river port has, or can have, the importance of Hankow or Hankau, at which the waterways of western China converge in such a manner as to make it the inlet and outlet of Hunan, Sechwan, Kweichau, the greater part of Hupe, as well as of southern Shensi. The projected railways, it will be observed, tend to confirm the importance of this situation, but if Wuchang, on the opposite bank of the Yangszte, were also made a treaty-port, it is probable that after the introduction of railways the coalfields of Hunan would cause a very large part of the trade to be concentrated there.

Shashi, one of the more recently opened treaty ports, about midway between Hankow and Ichang, has the advantage of two important canal connections. One canal runs thence eastwards to the lower Han, thus avoiding a great bend of the Yangszte. The other starts from the point of the river Yangszte opposite, and leads to the Tungting Lake in Hunan. Shashi has thus long been the center of an enormous traffic in native junks, and as the neighboring country is the most important cotton weaving district in China, the cottons are collected, graded, and shipped at Shashi in large quantity.

Of the southern seaports the most important is Canton, the most populous town in China, with a situation analogous to that of Calcutta on one of the most productive of tropical deltas, with the advantage of having better communications by water in different directions, but suffering from the great disadvantage of not being accessible to ocean ships of such large size

as those which can reach Calcutta. All vessels drawing more than 16 feet have to lighten at Whampoa, 14 miles below the port.

Of the northern treaty ports Taku, the port of Peking, has a bar that prevents the access of vessels drawing more than 16 feet even at the highest spring tides, and Tientsin can be reached only by smaller coasting steamers. The importance of this place is due to the traffic on inland waterways. The same is true of Hangchau, the great silk-manufacturing town to the southwest of Shanghai. The bay on which it appears to stand can be navigated to its head only by small vessels, and the town is cut off from this bay by an embankment to protect it from the violent bores which ascend the bay at spring tides. Of the four inland treaty ports near the southern frontier, Lungchau and Mengtse have been opened to facilitate trade with Tongking, Sumao with Siam, and Momein or Tengyueh with Burma.

### **INDO-CHINA**

Ports: Saigon, Haiphong.

Indo-China is a peninsula in southeastern Asia bordering on China, Burma, and Siam. It comprises Cochin China, Tonkin, Anam, Laos, Cambodia, and the territory of Kwang-chow and has an area of approximately 270,000 square miles. The population of more than 16,000,000 is divided as follows: Tonkin, 6,000,000; Annam, 5,000,000; Cochin China, 3,000,000; Cambodia, 1,600,000, and Laos, 630,000. The Anamite race, by far the most numerous, numbers 12,600,000, and the number of foreigners (white race) is estimated at about 14,000, more than 4,000 of whom (exclusive of military) are in Saigon.

Saigon is the only seaport of Cochin China, and does, normally, 70 per cent of the trade of Indo-China. The harbor has docking facilities for 37 large steamers at one time.

Haiphong is the seaport of Tonkin and taps the rich Red River Basin. This city has a wharfage of 1,800 feet with accommodations for four large steamers.

Indo-China produces a wide variety of products, chief among which are rice, maize, rubber, pepper, cinnamon, copra, cotton (Cambodia), sugar, coffee, tea, silk, tobacco, stick and gum lacquer, aniseseed extract, castor oil, kapok, and fruits. Cattle and carabao are raised in Cambodia. Tonkin, the main industrial center, has a wide variety of mineral products also, the principal ones being coal (at Hon-gay), zinc, lead, wolfram, and tin. Here, too, the manufacture of cement, alcohol, matches, beer, soap etc., is carried on.

More rice is exported than all other products combined. Among other exports are fish, hides and skins, pepper. maize, copra, hogs, rubber, cotton, coal, cattle teak, matting, tortoise shell, zinc, cement and cement stone, lacquer oil, silk and silk goods, coffee, tin, and wolfram.

Imports into this country consist principally of cotton goods, silk goods, jute gunny bags, opium, gold leaf, paper and paper goods, porcelain and pottery, petroleum and its products, hardware, tobacco, cigars, and cigarettes, areca nuts, wines and liquors, vegetables (fresh, dried, and salted), tea, flour, table fruit (fresh, dried and preserved), iron and steel, soap, glassware, machinery, chemical products, prepared medicines, rubber goods, hemp, condensed milk, automobiles, fish and sea products, joss sticks, leather and leather goods, silk thread, and sugar candy and sirup.

Indo-China has a complicated tariff with minimum, maximum, and special rates of taxation. Charges are usually specific on 100 kilos. Although the United States enjoys the minimum tariff on certain products, it is usually a theoretical advantage, as the goods have to be shipped directly to Saigon or via a French port to obtain this advantage. Certain American articles have a special rate, which is generally between the maximum and minimum tariffs.

Owing to the absence of direct steamers from Indo-China to the American seaboard, the trade in 1917 only amounted to about \$125,000. There is quite a demand for American goods, especially flour, canned goods, dried fruits, cheese,

leather, roofing materials, cement, tin, machinery, hardware, tools, stationery, autos, all kinds of metal sheets, steel bars, nails, etc.

The chief export from Haiphong direct to United States in 1916 was zinc, the amount being 4,500 tons. Rice, hides, mats, etc., were also shipped, but through Hongkong.

### **MANCHURIA**

Ports: Antung, Dairen, Newchang, Port Arthur. China proper is bordered on the northeast, north and west by various territories more or less directly under Chinese rule. Manchuria is the most important of these. It lies to the northeast, and is the country from which the present Chinese imperial dynasty originally came (1644). It has mountainous country in the east and west, the eastern mountains being rich in places in coal and iron. The intervening country, mostly level and to a large extent extremely fertile, is drained partly by the Liau-ho into the Gulf of Pechili, partly by the Sungari, with its tributary, the Nonni, into the Amur—all fine navigable streams. Notwithstanding its fertility it is still, comparatively sparsely peopled especially in its middle and northern portions, where some of its most fertile tracts are situated. It is hence likely to be one of the chief sources of food supply for some of the future industrial regions of China proper. Chinese settlers have long been flocking into it, and the works in connection with the Russian railways running through it have recently hastened on this movement.

Besides the capital, Mukden, there are several others—Liauyang, Kwanchengtse, Kirin—estimated to have more than 100,000 inhabitants, Tiehling and Tstsihar are at the head of navigation respectively of the Liau and the Nonni. The new towns growing along the railways under Russian auspices are all solidly built and provided with the latest conveniences of European cities. The most important of these is the new Kharbin or Harbin (a short distance from the old town of that name), situated where the railways diverge for Vladivostok and Port Arthur and Dairen (formerly Dalny), in a country as rich as Minnesota, with coal measures not far distant and forests near by. Niuchwang of Newchwang is the treaty port near the mouth of the Liau. It was at first a free port established by Russia, in the leased territory adjoining Port Arthur, but in 1903 was placed under the Imperial Maritime customs. This leased territory was transferred to Japan at the close of the war of 1904-5.

The largest extent of pasturage in the Chinese Republic is in Manchuria and Mongolia, cattle, and particularly goats, being numerous in Manchuria. The exports sent into China, except along the northern border, consist of opium, beans, wheat, millet, ginseng, and skins. Wheat and hay are sent into eastern Siberia along the northern border; the Russians also hold Manchurian lands under lease, and send their products north across the Amur. Manchuria is destined to be one of our best eastern customers.

#### Consular Regulations

No consular regulations are required by China. Of great importance to shippers is the manner in which the goods are packed, as shipments for the interior must often be carried by coolies. A shipper should understand fully, before packing his goods, just what transportation conditions have to be met with until the point of destination is reached.

The trade returns of the port of Darien for 1917 show a total commerce of 135,940,000 haikwan taels (the United States Treasury rate for the haikwan tael fluctuated between \$0.91 and \$1.19 in 1917), imports forming 72,760,000 taels of this amount and exports 63,180,000 taels, giving an excess of imports of 9,580,000 taels. Compared with the previous year these figures represent an increase of 51 per cent in the aggregate amount and one of 240 per cent in the excess of imports.

Darien's trade exceeded that of the other two ports of South Manchuria by 93,010,000 haikwan taels in the case of Antung and by 107,110,00 taels in the case of Newchwang. Of the grand total of 207,700,000 haikwan taels, the returns of all three ports combined, Darien's share was 65

per cent, Antung's 20 per cent, and Newchwang's 15 per cent. The percentages for the annual returns during the five years 1913-1917 were:

	Darien.	Antung.	chwang.
Years—	Per cent.	Per cent.	Per cent.
1913	52	11	36
1914	57	14	28
1915	57	16	27
1916		19	21
1917	65	20	15

Work on the Szechang Railway, a branch of the Chinese Eastern Railway, between Szebingchian and Sabtsian-kwo has been finished. This extension will be carried on to Dzenchianton, or a distance of 62 miles. A short branch of the Peking-Mukden line has also been opened up.

### LESSER ISLANDS OF THE PACIFIC

(No Consular Invoice Required.) Bismarck Archipelago (German)\* Borneo (British and Dutch) Caroline Islands (German)\* Celebes (Dutch) Christmas Island (British) Fanning Island (British) Fiji Islands (British) Friendly Islands (British)
Gilbert Islands (British) Guam Island (United States) Hervey Islands (British) Lombok (Dutch)
Loyalty Islands (French) Malanesia Malay Archipelago (British) Marianne Islands (German)\* Marquesas Archipelago (French)

Marshall Archipelago (German)\* New Caledonia (French) New Guinea (Dutch, German\* and British) New Hebrides (British and French) Penrhyn Island (British) Pelew Islands (German)\* Polynesia Samoan Islands (German\* and United States) Singapore (British)
Society Islands (French) Solomon Islands (German)\* Straits Settlements (British) Sumatra (Dutch) Tahiti (French)
Timor Archipelago (Dutch) Tonga (British) Tutuila (United States)

\*What disposition will be made of the islands taken from Germany during the war will not be determined until peace is formally concluded.

#### Steamer Routes

Methods of reaching the various islands in the Pacific were greatly disrupted by the European war. Prior to that several German lines afforded transportation for freight and passengers to many of the islands and chiefly to those owned by Germany. Japan is now the custodian for the allies of the islands listed above as German and a number of Japanese lines have been serving the islands. Most of those farther south are reached via Australia. The Howard Smith Co., Burns, Philp & Co. and the Oceanic S. S. Co. have service from Australia and New Zealand to the islands.

In order therefore for the shippers or for a prospective passenger to obtain information as to the most direct connection with any of these islands, inquiries should be made of the nearest representative of the three companies mentioned above or of the representatives of any of the Japanese S. S. lines who would be in a position to give the latest information. Or an inquiry addressed to the editor of Pacific Ports will receive a prompt reply by telegraph or mail as requested.

Stuart J. Fuller, United States consul general at large for Eastern Asia, including the Straits Settlements, Australia, Oceanica, and the islands of the Pacific.

United States consulates at Batavia and Soerabaia, Java, Macassar, Celebes; Singapore and Penang, Straits Settlements; Apia, Tahiti.

New Guinea, which is of about the same size as New South Wales, is the largest island in the world, with the exception of Australia. Its western half, as far as

the meridian of 141 degrees east, has long been claimed by the Dutch, but till recently its eastern half was independent. Now, however, this portion has also been declared to be under the protection of European powers. In May, 1885, the southern portion of the eastern half, together with the Louisiade Archipelago, was declared under British, the northern under German influence. In September, 1888, the section under British influence was formally erected into a British Crown colony, but it has been handed over to the Commonwealth of Australia. The German section is now called Kaiser Wilhelm Land. It is now held by the British.

New Guinea is producing vast quantities of copper. The Laloki mine has \$10,000,000 worth blocked out. Large shipments have already been made. The Astrolabe field in the neighborhood of Port Moresby is also full of promise, but owing to transport cost only the richest grade can be exported. Another large field has recently been discovered near Samarai. New Guinea has also produced \$1,400,000 worth of gold; the output is increasing every year and new fields are being rapidly developed. Oil is also being produced and there is a field of 1,000 square miles; petroleum of high value has been produced and developments are rapidly being pushed forward. Rubber is being exported and very large plantations are being operated. The largest industry is cocoanut growing and considerable quantities of copra are being shipped away

annually.

In the fiscal year of 1916-17 the foreign commerce of Papua showed a remarkable recovery from the decline that occurred upon the outbreak of the European war. The total value of the trade was \$2,083,714 as compared with \$1,631,611 in the pre-war year of 1913-14. This is the eleventh year this territory has been under the administration of the Commonwealth of Australia. Agricultural products and groceries, textiles and wearing apparel, metals and machinery, and tobacco are the chief imports, and all but tobacco showed a gain during the 1916-17 period. The principal imports were, ale, spirits and beverages, tobacco and manufactures thereof, agricultural products and groceries, textiles, felts and furs and attire, metals and machinery, oils, paints and varnishes, earthenware, cement, china, glass and stone, drugs and chemicals, wood, wicker and cane, jewelry and fancy goods, leather and rubber, paper and stationery. Exports leaped during 1916-17, with a high-water mark of \$138,788. Most of this gain was attributable to the larger trade in rubber, copra and hemp. The leading articles exported were: Bark, beche-de-mer, copper, ore, copra, gold, gold ore and concentrates, grain, hemp, natural history specimens, pearls, rubber, sandalwood, shells (pearl, trochas, turtle), timber.

Completion of all but the most essential public works has been deferred until there is a reduction in the cost of construction. Work on the Port Moresby wharf was continued, but construction has been slow.

The surface of the island is in many parts mountainous. The whole of the narrow southeastern extremity (which lies almost entirely within the British protectorate) is traversed by chains of mountains, known as the Owen Stanley Range, with peaks, upwards of 13,000 feet high. Lying within the monsoon area, the whole island receives copious rains during about half the year, and, like other tropical countries with an abundant rainfall. New Guinea is covered with dense forests, which are one of the chief causes why the interior of the island is as yet so little known. Two great navigable rivers have indeed been ascended for hundreds of miles into the interior. One of these is the Fly, which forms a great delta on the western side of the Gulf of Papua in British territory. The other is the Kaiserin Augusta, which enters the sea near the middle of the toast-line of the German protectorate. Neither of these rivers has as yet, however, served as the means of gaining much knowledge of the land beyond its banks.

Like other uncivilized natives of tropical countries, the inhabitants of New Guinea are very indolent. The food plants which they grow are mainly such as require but little cultivation: Bananas, yams, sugar cane, cocoanuts and taro; but in addition to these tobacco is also grown,

and is indeed so highly prized that it is the chief article of barter with the natives. The difficulty of obtaining laborers will probably prove a great obstacle in the way of creating export products of a more lucrative kind, such as are produced in Ceylon and Jamaica. Alluvial goldfields are worked by Europeans, chiefly in the Louisiade Archipelago.

Mission stations have existed for many years at different points of the coast now under the protection of Great Britain, and in the schools belonging to the stations many native children are educated, many of the teachers being natives of other islands of the Pacific. The seat of administration of British New Guinea is at Port Moresby, which lies to the east of the Gulf of Papua, and has regular steam communication with several ports in Queensland. It lies behind a long barrier reef which skirts the whole of this part of the New Guinea coast, access being obtained to it by one of the numerous deep channels by which this reef, like the Great Barrier Reef of the neighboring coast of Australia, is crossed.

Melanesia. This name, meaning "islands of the blacks," is applied to several groups of small islands to the east and southeast of New Guinea, inhabited by

Papuans.

The islands of New Britain, New Ireland, the Admiralty Group and others to the north of the eastern end of New Guinea are now known by the name of the Bismarck Archipelago and belong to Germany. They were taken by the British during the war. These are followed south-eastwards by the New Hebrides, and New Caledonia. The last mentioned island, along with the adjacent group of the Loyalty Islands to the east, belongs to the French, who make use of it as a place of deportation for convicts and political offenders. It is skirted all round by a long line of coral reefs, which stretch for a considerable distance to the northwest, enclosing a number of small islands. Numea or Noumea, in the southwest of the island, is a port of call for the vessels of the French line of steamers which visit the ports of Australia. Under an agreement concluded between the British and German governments in 1885, part of the Solomon group is declared to belong to the British, part to the German sphere of influence. Great Britain has since seized the German possessions. The German flag was hoisted on the islands of Bougainville, Choiseul, and Ysabel, but in 1899 Choiseul and Ysabel were transferred to the British sphere. The New Hebrides are under the joint protection of the British and French, neither power having the right to form settlements on the islands.

Polynesia: This name is applied to all the small islands of the Pacific Ocean, with the exception of those already mentioned. They are almost all situated within the tropics, and the chief food of the people is the breadfruit, in addition to those already mentioned as cultivated in New Guinea. The people belong to a race with a clear brown skin and smooth hair, and are a branch of the great Malay stock, to which the Maori also belong. Christianity has been introduced with con-

siderable success on many of the islands.

The Fiji Islands are a group composed mainly of volcanic islands situated to the north of New Zealand, and mostly lying between the parallels of 16 degrees and 19 degrees south. Their total area is rather larger than that of Wales and Viti Levu ("Great Fiji"), the largest of the islands, embraces more than half the land surface belonging to the group. Uanua Levu ("Great Land"), is another large island. The islands were ceded in 1874 by their native king to Britain, and now form a British Crown colony. Even before that time people of European origin had established plantations of tropical crops on several of the islands, and since that date the products of such plantations (chiefly sugar, but also cocoanut, maize, tobacco, coffee and cotton) have increased very greatly, and a large trade has thus grown up.

The chief ports are Suva, the capital, Apia, and Levuka. The Union Steamship Co., of New Zealand, and Burns, Philp & Co., Ltd., have vessels calling at all three ports. The C. P.R. (Canadian-Australasian) calls at Suva and the Australian Mail Line (from Tacoma) at Apia. Levuka



has a Chamber of Commerce, and the leading importing and exporting firms at that port are Hedemann, Evers & Co., general merchants, Hedemann & Co., general merchants, Krafft & Smith, general merchandise, copra and timber, Morris, Hedstrom, Ltd., general merchants, and Robbie, Kaad & Co., copra, timber and general merchandise. Branches of the Bank of New South Wales and the Bank of New Zealand operate here. The same banks are located in Suva. Among the importing and exporting companies in business at the capital are A. M. Brodziak, Ltd., general merchants, Brown, Joske & Co., general merchants, W. H. Johnson, general merchants and com. agt., Krafft & Smith, timber merchants, H. Marks & Co., Ltd., general merchants, Morris, Hedstrom, Ltd., general merchants, Sturt, Ogilvie & Co., general merchants, J. Wishart & Sons, timber.

The plantation laborers are partly natives of the islands the plantation laborers are partly natives of the islands themselves; but Polynesian laborers and Indian coolies have been introduced. The chief towns of the group are seaports with fine harbors protected by coral reefs. Suva which is situated in the southeast of Viti Levu, has a population of 5,100. The next in importance is Levuka, the former capital, on a small island to the east of Viti Levu. The small island of Rotumah, to the north of the Fiji group, is also British and is annexed to the colony of Fiji. There are about 250 islands in all, a number of

which are merely uninhabited islets and rocks.

The rubber industry is receiving much attention in the Fiji islands, and New Zealand farmers have planted large plantations that have produced quantities of rubber reported to be of a very high grade. It is claimed that there are thousands of acres in the Fiji Islands that are well adapted to this industry, and it is expected that extensive developments will follow. It is expected, when normal conditions are restored, that this will become a profitable industry in these islands where labor is comparatively cheap.

The total value of imports and exports for the year 1917 amounted to \$4,922,017 (including specie, value \$379,-358) and \$10,065,873, as compared with \$4,275,220 and \$10,969,305 in 1916.

The chief reductions in imports were: Bags and sacks, The chief reductions in imports were: Bags and sacks, \$76,740; paints, \$11,042; rice, \$6,506; cigars and cigarettes, \$5,416, and live stock, \$4,978. The principal increases in imports were: Timber, \$67,542; drapery, \$49,657; manure, \$49,000; meats, \$47,132; hardware, \$25,242; fish, \$21,714; tobacco, \$19,359; oils, \$19,213; iron—black, pig and scrap, rails, etc., \$18,079; boots and shoes, \$15,047; stationery, \$11,903; cordage and rope, \$11,008; galvanized iron and manufactures, \$7,888; spirits, \$7,051; leatherware, \$4,535.

The leading items of export continue to be sugar, copra and green fruit the quantities and values of these products.

The leading items of export continue to be sugar, copra and green fruit, the quantities and values of these products exported during the year being: Sugar, 97,335 tons, valued at \$7,226,947; copra, 15,368 tons, valued at \$1,748,883; green fruit, valued at \$825,932. Bananas exported amounted to 529,454 bunches and 413,301 cases, as compared with 817,499 and 417,065 in 1916. The principal minor exports were: Sici shell, \$80,239; rubber, \$57,444; molasses, \$53,760; hides, \$21,062, and beche de mer, \$14,439.

The bulk of the colony's trade is transacted with or

The bulk of the colony's trade is transacted with or through Australia and New Zealand.

Tonga Island, situated east of the Fiji group. The soil of the Tonga Islands is very fertile and the vegetation rich and varied. The climate is dry and cool and is healthy for white men. Mammals are scarce, but there is a large variety of birds. The area is 390 square miles, and the population (1911 census) consists of 23,011 Tongeans, 346 Pacific islanders, and 380 Europeans. The natives are Christian and educated. Native produce consists mostly of copra, green fruit, mats, tapa (a textile from bark), and fungus. The islands are ruled by a native king under British Protectorate.

Society Islands. These islands number about 200 and belong to France. Their population is approximately 35,000. Papeete, on the island of Tahiti, is the capital. The chief products of the islands are fruits, cocoanuts, vanilla beans, copra being the largest export. An inexhaustible supply of phosphate deposits exists on Makatia island. Pearl shells and beeswax also figure in the export trade. The imports are chiefly cotton goods, kerosene, food products, and iron and steel manufactures. The

bulk of both imports and exports are handled by the United States. Tahiti, a charming volcanic island, is the

most important in the group.

Samoan Islands are included in the Navigator Island group. The Samoans are located about midway between Honolulu and Sydney and consist of four principal islands, and several smaller ones. The total population of the group is approximately 43,000. American Samoa includes Tutula and the Archipelago of Manua. Pago Pago on the island of Tutuila is the seat of government and naval station. The islands of Upolu and Savaii were seized by the British from the Germans. Imports come chiefly from Australia and the United States, and consist of ales, stout spirits, wines, tobacco, cigars, provisions, wearing apparel, machinery, iron and lumber. The principal exports are copra, cocoa, and rubber. In 1899 the Samoan Islands were divided between the German Empire and the United States.

The Tonga Island lies to the east of the Fiji group, and still further east are the Cook or Hervey Islands, the Society and Low Islands. In 1888 the British flag was hoisted on the Hervey group, the principal of which is Rarotonga. To the north of this group in about 9 degrees south lies Penrhyn Island, now also British, and still further north (between 0 degrees and 5 degrees north and east of 160 degrees west) lie two other small islands now British, Fanning Island and Christmas Island. All three yield pearl shell and copra, and are of importance as lying on the route of the telegraph cable to New Zealand and Australia. In 1899 the Samoan Islands (now entirely British) were divided between the German Empire and the United States, the German Empire receiving the islands of Savaii and Upolu, the latter containing the port of Apia, long the contact of German trade with the Pacific Islands. The center of German trade with the Pacific Islands. chief product of which for European markets is copra. The United States obtained Tutuila with the fine natural harbor of Pago-pago (pronounced Pango-pango). At the same time the right of the British to the Tonga Islands was recognized. The Low Islands and the Marquesas Group, to the north of the latter are under French protection.

Between the equator and 15 degrees north are the Pelew, Caroline and Marshall Islands, in that order from west to east, and south of the last-mentioned group, the Gilbert Islands. The first three of these groups belong to the German Empire (since seized by British), which also possessed the Marianne or Ladrone

Islands, to the north of the Carolines, with the exception of the island of Guam. This, the largest of the group, belongs to the United States.

The Malay Penninsula is the name of that part of Indo-China which projects southeastwards nearly to the greater. It is highly mountainage and clothed with density of the counter. equator. It is highly mountainous, and clothed with dense tropical forests, but at its northern end, at the Isthmus of Kra (between 10 degrees and 11 degrees north), there is a gap separating the mountains of this peninsula from those of the main body of Indo-China. This gap is only about 100 feet in height at the highest part, and it has often been proposed to pierce this isthmus by a ship canal, which would shorten the route from Calcutta to China by 660 miles and that from Burma to Bangkok by 1,300 miles.

The peninsula is partly under British rule, partly divided among a number of small states. The states in the north acknowledge a certain allegiance to Siam, but those in the southern half are more or less under British influence. The island of Singapore in the extreme south, the small territory of Malacca on the west coast, and the island of Penang, with one or two smaller islands and the patch of mainland called Province Wellesley farther north, form the British Crown colony of the Straits Settlements. The remainder of the south is occupied by the British protected states of Perak, Selangor, Sungei, Ujong (with Jelebu), Negri Sembilan, Pahang, Kedah, Kelantan and Trengganu, and the independent state of Johor, which however, has placed itself under British control as regards its external relative to the state of the state of Johor. tions. The protected states have formed a single federation since July, 1896. The governor of the Straits Settlements also has under his care the Cocos or Keeling Islands and Christmas Islands in the Indian Ocean.

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The natives of the peninsula are Malays, whence the name; but the Malays are being ousted in trade and industry by settlers from abroad of a more enterprising temperament. These are mostly Chinese and Indians, the latter mainly from southern India, and known in the peninsula as Klings.

Exports of gambier, gum, jelutong, mangrove barks, rattans and tin from Singapore in 1917 showed a slight decrease, but gutta percha increased from 498,246 lbs. in 1916 valued at \$89,825 to 2,212,719 lbs. in 1917, valued at \$281,940. Siak increased over 300 per cent, both in amount and value. Pepper increased from approximately 5½ million lbs. with a cash value of \$790,000 to 18½ million lbs., valued at \$3,380,000. Sago flour from less than 9,000,000 lbs. valued at \$140,000 increased to perselve than 9.000,000 lbs. valued at \$140,000 increased to nearly 30,000,000 lbs. approximating \$433,000 in value. Para rubber jumped from 92,000,000 lbs. to 167,000,000 lbs. of a cash value of \$88,000,000. Tapioca rose from 556,717 lbs, valued at \$27,630 to 9,888,819 lbs. of a value of \$845,538.

From Penang the rubber exports rose from under 10,00,000 lbs. with a value of \$500,000 to over 25,000,000 lbs., exceeding in value \$1,400,000. Tapioca rose from 9,000,000 lbs. to nearly 18,000,000 lbs. and in value from \$568,998 to just under \$1,000,000, while tin rose from 18,500,000 lbs. to 20,500,000 lbs. and increased in value nearly \$400,000 lbs.

Notwithstanding the difficulties of shipment the import and export trade of the Straits Settlements, both denote considerable gains. The general trade of the peninsula has been exceptionally good owing to the increased production of rubber and high prices for all local produce. duction of rubber and high prices for all local produce. The total imports from July to December, 1916, were \$170,785,796; January to June, 1917, \$183,717,594, and July to December, 1917, \$210,306,886. The exports were July to December, 1916, \$152,166,613; for January to June, 1917, \$190,630,406, and for July to December, 1917, \$201,028,791. The chief imports were cotton goods, milk, tobacco, motor cars, ironware, machinery and liquors. The chief exports were rubber, tin, pepper, tapioca, copra, hides, gambier and rattens. and rattans.

The Straits Settlements also derive great importance from their favorable situation for local and oceanic shipping. Malacca, captured by the Portuguese (Albuerque) in 1511, and from them by the Dutch in 1641, was in the 16th and 17th centuries the chief center of commerce in the Far East. In 1824 it was ceded by the Dutch to the British. Meantime, however, it had deteriorated as a port by the silting-up of its roadstead, and it was rapidly eclipsed by the port of Singapore, which was founded in 1819, on the island of that name, by Sir Stamford Raffles, who justly estimated the unrivalled advan-tages of its situation. Singapore is now, therefore, the tages of its situation. Singapore is now, merefore, me great entrepot and coaling station of the Far East. Its harbor allows of ships with a draft up to 36 feet loading and discharging alongside the quays. There are also large shipbuilding yards and means for efficiently repairing vessels of the largest size and their machinery. There are large tin smelting works both here and in Province Wellesley. Since the opening of the latter in 1903 Penang, which has an excellent harbor, has become the chief place of export of Perak tin. On the west coast of the mainland Port Weld, Teluk Anson, Port Swettenham, and Port Dickson are all convenient ports, above all Port Swettenham, the former Kwala Klang, in 3 degrees north, which is described as the most commodious and best equipped port on the Malay Peninsula.

The Eastern, or Malay Archipelago embrace all the islands in the southeast of Asia, with the exception of those belonging to China and Japan, as well as of New Guinea and the islands immediately adjacent. The islands are almost entirely in the possession of European Powers, and the greater number belong to the Dutch. To the Dutch belong the Great Sunda Islands of Sumatra, Java, and Celebes, with the greater part of Borneo; all the Lesser Sunda Islands, except the northeast of Timor, which is Portuguese; and theirs also are the Moluccas which lie between Celebes and New

Guinea.

The Moluccas, or Spice Islands, are a group of islands of which the principal are Halmahera or Jilolo, Ternate, Tidore, Bachian, Buru, Ceram, Amboina and the Banda Islands. They are still noted for the spices, especially cloves and nutmegs, to which they owe their especially cloves and nutmegs, to which they owe their name. Both Amboina and the Banda group lie to the south of Ceram. The small islands of Ternate and Tidore, to the west of Jilolo, were each formerly the seat of a powerful sultan, and Ternate is still the center of local trade in these eastern waters.

The whole of northern Borneo is now under British protection. It is made up of a section in the northeast subject to the British North Borneo Co.; another to the southwest, to the native sultan of Brunei; and a third, Sarawak still farther to the southwest, to a rajah of British family. British North Borneo has several safe and commodious natural harbors, though not as many as would appear from the outline on the map, some of the openings being encumbered with coral reefs. Sandakan, the capital, stands on one of the best of these on the northeast coast. Kudat Bay, on the north, also contains an excellent harbor. Both coal and gold are found, but the chief exports are jungle produce (gutta percha, rubber, rattans, camphor, etc.), fine timber, and plantation products such as tobacco, sago, coffee, cocoanuts, pepper, and gambier. The tobacco is of the kind suited for cigar wrappers. A railway 110 miles long is being laid from Weston on Brunei Bay northwards to Jesselton on Gaya Bay through land well adapted for plantations. Twelve miles to the south are the famous birds' nest caves of Gomanton, which yield an important export.

The small island of Labuan to the west of Brunei, formerly a British Crown colony, was handed over to British North Borneo in 1890 and then transferred to the Straits Settlements in 1906. It has a good port and coal deposits, the yield of which has lately been increasing. Sarawak, in which the river Rejang is naviable by steamers for 160 miles, has similar products to those of Borneo, pepper and sago being the chief.

### ISLAND OF JAVA **Dutch East Indies**

Ports: Batavia, Cheribon, Pekalongan, Probolingo, Semarang, Soerabaia, Tandjong-Priock, Tjilatjap.

Java is one of the largest islands of the Dutch East

Indian group, and is considered the most prosperous and important in the Archipelago. With its dependencies, Java has an aggregate area of about 50,554 square miles, and a population in the neighborhood of 40,000,000 inhabitants. The population is rapidly increasing, the overflow continuously spreading to the islands to the west. The island proper is 600 miles long, and its width varies from 60 to 100 miles. There are 2,460 miles of railroads, of which the government owns over one-half. Telegraphs. and a population in the neighborhood of 40,000,000 ingraph communication is maintained with virtually all points of importance through the island, requiring thousands of miles of telegraph lines.

### American Imports Increase

The import and export trade of the island of Java, which contains 80 per cent of the population of the Dutch East Indies, with the United States since the outbreak of the war may be expressed in guilders of \$0.402 as follows:

	Imports From U. S	S. Increase
Years	Guilders.	Guilders. Per Cent.
1914	6,200,000	
	11,500,000	5,300,000 85
1916		13,800,000 120
1917	47,400,000	22,100,000 87
	Exports to U. S.	Increase
Years	Guilders.	Guilders. Per Cent.
1914	10,900,000	
1915	26,600,000	15,700,000 144
	68,500,000	41,900,000 157
	141 800 000	73 300 000 107

An analysis of these figures as given below, shows that with one exception every group of imports into Java from the United States, and exports from Java to the United States, during the year 1917 registered an increase. The balance of trade in favor of Java has increased from 4.700.

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000 guilders in 1914 to 94,000,000 guilders in 1917, and this in spite of the fact that Java shipped only eleven tons of sugar to this country in 1917, against about 10,000 tons in 1915.

#### Imports to Java from U.S.

The value of the imports into Java from the United States during 1916 and 1917 were as follows:

		Increas <b>e</b>
1916.	1917.	in 1917.
Guilders.	Guilders.	Guilders.
Iron and steel ware 2,900,000	14,100,000	11.200.000
Automobiles and parts of 5,600,000	8,200,000	2,600,000
Machinery, utensils and	0,200,000	2,000,000
electrical apparatus 2,200,000	5,000,000	2,800,000
Kerosene	3,200,000	*1.500,000
Foodstuffs and beverages 1,200,000	1.800.000	600,000
Tinplate	1,700,000	100,000
Artificial fertilizer	1,600,000	1,600,000
Resin 700,000	1,300,000	600,000
Tires, automobile and	1,500,000	000,000
	1,300,000	550,000
	1,300,000	330,000
Dry goods, thread, yarn, clothes and millinery 700,000	1,000,000	300,000
	1,000,000	300,000
Paper, paper articles, writ-		
ing and drawing materials 300,000	1 000 000	700,00Ò
terials 300,000	1,000,000	700,000
Lubricating (mineral) oil,		
chemicals, pharmaceu- ticals, hospital supplies 650,000	800.000	150,000
ticals, hospital supplies 650,000		150,000
All other 3,100,000	5,500,000	2,400,000
Total25,300,000	47,400,000	22,100,000
*Decrease.	47,100,000	22,100,000
	7 (00 000	4 000 000
Hides 2,700,000	7,600,000	4,900,000
Pepper	7,300,000	4,000,000
Tapioca products 4,400,000	6,900,000	2,500,000
Sisal hemp 3,100,000	6,900,000	3,800,000
Kapok 2,740,000	2,560,000	*180,000
Cinchona bark, quinine 100,000	2,100,000	2,000,000
Copra 800,000	1,700,000	900,000
Coffee 400,000	1,200,000	800,000
Native hats 700,000	900,000	200,000
Cocoa 40,000	870,000	830,000
All other 1,620,000	2,570,000	950,000
Total	141 800 000	73,300,000
*Decrease.	11,000,000	. 0,000,000
2001 04301		

### Quantities of Exports to America

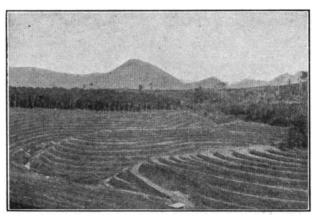
The exports to the United States during 1916 and 1917, expressed in shipping tons of 40 cubic feet and in long tons of 2,240 pounds, were:

1916.   1917   in 1917.   Shipping   Shipping   Shipping   Tons.   T	tons of 2,240 pounds, were:			Increase
Tapioca products         Tons. 39,500 (40,500) (1,000)           Rubber         8,100 (14,800) (6,700)           Tea         400 (13,700) (13,300)           Tin         11,700 (13,600) (1,900)           Sisal hemp         8,100 (12,800) (4,700) (1,000)           Pepper         6,200 (10,100) (3,900)           Copra         3,500 (7,100) (3,600) (7,000) (7,000)           Kapok         5,000 (5,700) (7,000) (1,000) (1,000)           Hides         4,100 (4,200) (1,000) (1,000) (1,000,000)           Coffee         516,000 (1,589,000) (1,073,000) (1,073,000) (1,080,000)		1916.	1917	in 1917,
Tapioca products         39,500         40,500         1,000           Rubber         8,100         14,800         6,700           Tea         400         13,700         13,300           Tin         11,700         13,600         1,900           Sisal hemp         8,100         12,800         4,700           Pepper         6,200         10,100         3,900           Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         Long           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000		Shipping	Shipping	Shipping
Rubber         8,100         14,800         6,700           Tea         400         13,700         13,300           Tin         11,700         13,600         1,900           Sisal hemp         8,100         12,800         4,700           Pepper         6,200         10,100         3,900           Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         Long           tons         tons         tons         tons           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000		Tons.	Tons.	Tons.
Rubber         8,100         14,800         6,700           Tea         400         13,700         13,300           Tin         11,700         13,600         1,900           Sisal hemp         8,100         12,800         4,700           Pepper         6,200         10,100         3,900           Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         tons           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000	Tapioca products	39,500	40,500	1,000
Tin         11,700         13,600         1,900           Sisal hemp         8,100         12,800         4,700           Pepper         6,200         10,100         3,900           Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long           tons.         tons.         tons.           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000		8,100	14,800	6,700
Sisal hemp         8,100         12,800         4,700           Pepper         6,200         10,100         3,900           Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         Lons           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000	Tea	400	13,700	13,300
Pepper         6,200         10,100         3,900           Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         Long           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000	Tin	11,700	13,600	1,900
Copra         3,500         7,100         3,600           Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         Long           coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000	Sisal hemp	8,100	12,800	4,700
Kapok         5,000         5,700         700           Hides         4,100         4,200         100           Long         Long         Long         Long           tons.         tons.         tons.         tons.           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000	Pepper	6,200	10,100	3,900
Hides         4,100         4,200         100           Long         Long         Long         Long           tons.         tons.         tons.         tons.           Coffee         516,000         1,589,000         1,073,000           Cocoa         52,000         1,132,000         1,080,000	Copra	3,500	7,100	3,600
Long Long Long. tons. tons. Coffee		5,000	5,700	700
Coffee         tons.         tons.         tons.           1,589,000         1,073,000           1,132,000         1,080,000	Hides	4,100	4,200	100
Coffee       516,000       1,589,000       1,073,000         Cocoa       52,000       1,132,000       1,080,000		Long	Long	Long.
Cocoa 52,000 1,132,000 1,080,000				
	Coffee	516,000	1,589,000	1,073,000
Cinchona bark and quinine 3,000 794,000 791,000		52,000	1,132,000	1,080,000
	Cinchona bark and quinine	3,000	794,000	791,000

The export of cocoanut oil increased from 1916 to 1917 by about 18,900,000 liters and the export of native hats by some 1,044,000 pieces.

### Imports Helped by Direct Trade

The value of American iron and steel received at Java in 1917 was greater than that received from Holland in 1913, the year before the war; and the value of the machinery, utensils and electrical apparatus imported from



Grounds Prepared for Planting Cinchona Trees

America showed an increase of 1,000,000 guilders over the imports from England and Germany in 1913. Even considering increased values this comparison remains remarkably significant, because the buyers of the Dutch East Indies are learning to depend less on Europe for their supplies and are at the same time realizing the value of direct trade with countries purchasing their products.

of direct trade with countries purchasing their products.

Batavian markets for Java's products of rubber, tea, tin, etc., are supplanting in importance European markets heretofore handling these products and colonial banks now handle export drafts direct on New York at very liberal terms.

One of the significant details lacking in these groupings is the increase in the import of American dyestuffs, which advanced from 91,800 guilders in 1916 to 496,100 guilders in 1917, placing the United States second as Java's source of supply for these goods, but still representing only about one-quarter of the total imports of dyestuffs into Java in 1917, which amounted to 2,067,000 guilders.

### Agricultural and Mining Products

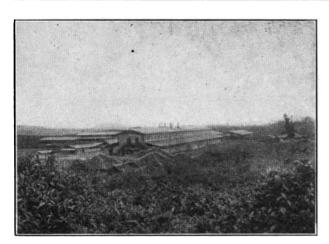
While our export trade with Java has increased in value, Java's increased sales of its products in this country has had an important bearing on the situation. Direct shipping lines are now established and with the increased credits maintained the tendency to buy American goods is a natural and economic result. In furnishing us with raw materials and in turn purchasing our manufactured materials the Dutch East Indies offer a very good market for American products. In doing business direct both sides are benefited and the former middleman's profit eliminated.

The natives of Central Java, by reason of their language, literature, and art are considered among the most advanced peoples of the Archipelago. Those engaged in the agricultural industry have proved highly methodical farmers. The European merchant in Java is generally an importer and wholesale dealer only, and the Chinese who have settled in large numbers, occupy the place between the European merchant and the natives.

Imports consist of cotton and woolen goods, provisions, earthenware, fish, butter, haberdashery, artificial manure, flour, rice, coal, petroleum, brandy, gin, wines, beers, liquors, champagne, mineral waters, matches.

The chief articles of export are sugar, coffee, rice, arrack, rattans, nutmegs, tobacco, indigo, gum damar, kapok, india-rubber, tea, tin, cinchona bark, quinine, gutta percha, mace, pepper, copra, cocoa, tapioca, copper iodide, ampas.

Sugar is one of the chief products of the island in which it ranks as the world's second largest producer. The process of cane sugar manufacture, as it is carried on in Java, is claimed to be the most up-to-date in the world. Over 190 factories are engaged in the sugar industry, and during the past 10 years the quantity of production has steadily increased largely through the import of artificial manure which has proved a vital aid in sugar culture. The generally used artificial manure is sulphate of ammonia of which in 1918 about 45,000 tons were imported, for a value of 8,000,000 guilders. This article came generally



A Tee Factory in lave

from England. The sugar-estates in Java are confined almost exclusively to the Eastern and Central parts of the island, that is to say, to the districts east of the line formed by the river Tjimanoek. The entire stretch of low-land along the northern coast extending from the river Tjimanoek to the mountains of Rembang is set apart for the cultivation of sugar-cane. Throughout the island there are 388,992 acres under cultivation, with an annual average production of 1,600,116 tons.

Java virtually holds a monopoly of the world's production of cinchona. More than 20 known species of cinchona grow on the Island, each of which shows a marked predilection for a certain locality. The species vary very greatly as to the percentage of alcaloids which each contains, and quite a number are worthless for medicinal purposes. The trees grow best at an altitude of 5,000 feet. After many experiments as to the best methods for harvesting the bark, the practice of cutting down the trees between 3 and 4 years of age and planting new ones has become universal. The plant is not indigenous to the island, having been originally imported from South America. In addition to the estates, which number 110, the government is also engaged in this industry.

For the greatest part Java tea is of a common and somewhat plain medium description, but it is, as a rule, carefully made and sorted. It possesses a regular appearance which attracts the blender. Yet there are also teas grown at higher altitudes which possess such flavor and bright tips as to make them suitable substitutes for British Indian and Ceylon teas.

The importance of the cultivation of oil producing plants finds entire districts turned into vast cocoanut groves. The cocoanut palm thrives best near the shore, within hail of the breakers but a salty atmosphere is by no means a condition of life. The palm will bear fruit at altitudes up to 3,000 feet above sea level, but above 1,500 feet its fruit-bearing capacity is greatly diminished. According to a popular belief, the tree likes the company of human beings and will not thrive beyond the reach of the human voice. For this reason it is planted so near to the dwelling houses of the natives. The fact that the palms will not thrive if they do not receive proper care has given rise to this belief.

### Coffee Suffers from Disease and Pest

There are 382 coffee estates in Java, and the output has shown an increase from year to year despite the fact that the coffee plant has suffered severely from disease and pest, coupled with unfavorable climatic conditions. Great success has been obtained by the plantations along the slopes of the volcanoes in East Java.

In Java there are also a number of tobacco estates under European management and, similar to the outlying possessions, planting is carried on largely by natives who are supported by the popular credit banks which enable them to purchase good planting material. A system is in vogue whereby the products raised by the natives without European assistance are bought up by the European

estates. Better results are being attained since the introduction of modern methods.

The cocaine plant was also brought from South America and at the present time about 73 estates are found carrying on its cultivation. The yield, however, falls much below that attained by the Peruvian bark growers.

Kapok, one of the most important products of export, is indigenous to Java and its cultivation is carried on The tree grows easily and the culture is simple. The kapok is secured from the fruit which bursts open as soon as it is ripe, exposing a fibrous substance round the seed. After this has been dried and separated from the seed it is put to different uses, particularly that of fillings for pillows and mattresses. It is also used in stuffing life-saving belts on account of its buoyancy and absorbent properties.

The culture of Indian corn is carried on principally in East and West Java, the latter district producing a quality of corn that is well suited for export.

Teak is found in the lower and warmer regions of Central and East Java. The trees do not require a very rich soil and flourish on the limestone hills of Central Java. It is estimated that there are at least 2,000 different limbs of trees on the island but a great number are kinds of trees on the island, but a great number are

unfit for any other purpose than use as firewood.

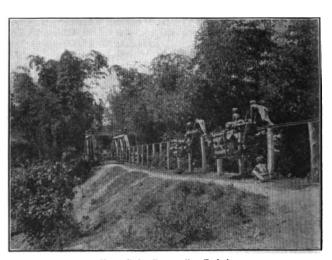
Cassava, a root-crop is produced in large quantities and is sold on the market under the name of gaplek for use in the preparation of tapioca flour (pearl and flake). The residue, called ampas, is exported to Europe where it is manufactured into cattle food.

Rubber estates in Java number fully 400, and in June, 1914 there were 92 kapok estates. Shipments of rubber from Java to the United States in 1917 reached 60,000 pounds. The manufacture of salt without government sanction is prohibited. In the outlying districts where considerable salt manufacture is carried on, the natives still adhere to the most primitive methods in its production.

A number of paraffin factories are operating on the island. There are also marble quarries where the stone is worked into tiles, a modern plant for the distillation of engine oil, lime kilns and manufactories for building materials, and a factory for the manufacture of paste board.

Iodine is extracted from the hot springs of Java and shipped to Europe in the form of copper iodide. Wolframite, sulphur, and manganese are found, but in small quantities only. Petroleum interests have possession of petroleum springs on the island, and in conjunction with the springs operate two refineries, one at Soerabaia, and the other at Semarang. Factories are also operated at Tjepal and Semarang for the preparation of the various articles obtained from the refuse, such as paraffin, kerosene, stearine and candles.

The island of Madura belongs to Java, and is administered over by the former.



Menerali for Transporting Teak Logs Digitized by Google

### ISLAND OF SUMATRA

### **Dutch East Indies**

Ports: Belewan, Medan, Oleh-Leh, Padang, Sabang.

The island of Sumatra is one of the most important in the Dutch East Indian group, and has a population exceeding 3,180,000. It is situated south of the Malay peninsula and has an estimated area of 177,000 square miles. Agriculture is the principal industry, and tea, coffee, rice, indigo, sugar and tobacco constitute the more important products of export. Sumatra tobacco is second only to Havana.

As a rule, native labor is employed on the various estate, but in certain localities along the East Coast this cannot be obtained, and it is necessary to resort to contract labor from China. Great numbers of Chinese earn their living either as free laborers, small farmers or merchants; others who have settled on the island find a means of livelihood by fishing and wood cutting. It is on the Chinaman that the economic importance of the East Coast largely depends.

The Malay tribes of the interior of Sumatra, which is little known, are characterized by their unwillingness to work. The women are the chief providers and, not only do they perform their household duties, but are responsible for the work in the fields. In many districts the wife is head and ruler of her family.

The mountainous districts of the island are particularly adapted to the cultivation of tea, and the best results are obtained in a moist atmosphere at an altitude between 300 and 800 metres. In 1914 an "Official Tea Seed Control Office" was established at Belawan Deli (Sumatra East Coast). All the imported seeds are carefully examined at this port with the result that the cultivation of tea has already begun to benefit considerably by the measure.

Gold mining is carried on in several districts. Natives are employed in the washing of the river sediment and, in certain parts of the island, they also work the tertiary beds in a very primitive way by means of adits. The more important mining companies confine themselves exclusively to the working of the vein deposits. The greatest quantity of gold produced in the East Indies comes from the Residency of Bencoelen, where three mines are working. The veins sometimes extend a length of four kilometres. A mining center is also being opened up in central Sumatra, near Padang.

Pepper is chiefly grown in the northern part, that is, in Atchee and the adjacent districts, and also in the south. The product of the northern district is mostly shipped to Penang, while that of the southern parts is shipped to Batavia, Palembang or Singapore. Both in Atchee and in the Lampongs the prosperity of the inhabitants depends chiefly on the pepper crop and the prices they fetch, and for centuries past pepper has been a source of wealth to these districts. Gambir is grown in combination with pepper, and as a damp climate is required for its cultivation, the shrub thrives in the central regions of the island. The gambir plants grow to a height of 5 to 6 feet, and are planted at a distance of from 6 to 8 feet apart. If given the proper attention they begin to yield after a year or so. Gambir is put to many uses. It is used as a dye, especially for silks, and military equipments, and as a tan for fishing nets and leather. As a tan for leather it is especially valuable on account of the rapidity with which it penetrates the hide and prevents decay. In breweries gambir is used to clarify beer, and medicine values it as an astringent. It is oftentimes employed as a cure for hoarseness and other affections of the larynx.

The chief centres of petroleum production are confined to the districts of Langkat and Perlak in North Sumatra, and the Residency of Palembang, in South Sumatra. The crudes are noted for the large percentage of hydrocarbons and of naphthenes, which account for the high specific gravity of the benzine obtained from them. Nearly all Sumatra crudes are extremely rich in light products and, generally speaking, contain little or no paraffin. The oil fields of Northern Sumatra are especially distinguished for their abundant flow of gas, which contains a considerable per-

centage of light benzine. This is caught and liquified by means of compression. Three large refineries are located on the island

Vegetable tallow siak is a product of the district of Siak on the East Coast of Sumatra. It is obtained from two trees which are found growing wild in great numbers, especially in low-lying country. These trees produce seeds which contain useful fat. When the seeds are being collected, the flesh and skins are removed by hand and the kernels are then dried in the sun.

In those parts of Sumatra where communication between one place and another is difficult, the Government has established an automobile service for the conveyance of travelers and the carrying of mails, besides goods and money. Much attention is paid to roads, and of recent years there have been as many as 15 large works of construction in progress at one time.

Belewan is the most important harbor in the northeast, and is situated on the island of Belewan, near the mouth of the river of that name. The harbor is only accessible to smaller vessels owing to the sand bar at the mouth of the river. Work of dredging this channel has been going on and a depth of 16 feet at low tide has been reached.

In Sumatra, the Rice Banks, of which there are a large number throughout the Dutch East Indies, are confined to certain districts on the West Coast, and financial banks are being established in their place.

The principal exports are coffee, copra, fish (salted and dried), gambir, black pepper, petroleum, benzine, paraffin, candles, rattan, rubber, gutta percha, tapioca flour and tobacco. Sumatra imports beer, bicycles, cement, cotton goods, drugs and medicines, flour, haberdashery, iron and steel goods, machinery and implements, manures, matches, motor cars, provisions, rice, salt, sewing machines, soap, sulphuric acid, tea, tin plates and yarns.

The chief cities in their order of importance are Padang, Medan, Palembang, Fort de Kock, Kota Radja, Langkat, Asahan and Sahang.

### ISLAND OF BORNEO

### **Dutch East Indies**

Ports: Balik-Papan, Pontianak.

Dutch Borneo occupies an area of about 9,347 miles in the western and southern parts of an island situated midway between the Straits Settlements, the Philippines, China, and Australia. The rest of the island falls under a British protectorate. The region controlled by the Dutch has a population in the neighborhood of 1,000,000 inhabitants.

The island is extremely rich in natural resources. Minerals of almost every kind are taken out, the chief of these being gold, silver, diamonds, coal, antimonium, tin, and iron. The lure of gold which at one time captivated the attention of large numbers of natives in the western districts, has subsided and in most cases the gold-seekers have turned their attention to more profitable directions, principally the agricultural industry. The diamond mines in Borneo are mainly worked by private enterprise, and the greatest number of diamonds are found in the district of Martapoera, in the south and east division. In the last few years there has been a dwindling of the number of licenses issued for digging. The diamond mines yielded 1,258 carats of diamonds in 1914, and about 1,590 in 1913.

The production of petroleum is carried on chiefly in the district of Koetei and on the island of Tarakan. The Borneo crudes are distinguished for the large percentage of hydrocarbons and of naphthenes and accounts for a high specific gravity of benzine obtainable from these crudes. The Borneo crudes vary a great deal in composition and it is no uncommon thing to find oils of an entirely different composition in the same fields, e. g. at Sanga-Sanga, where at various depths the following oils are obtained: (1) heavy crude, spec. gravity 0.95; contains no benzine, kerosene or paraffin. (2) oils of a spec. gravity of 0.85; which yield up to 15 per cent of benzine, more than 45 per cent of kerosene, and from 8 to 13 per cent of paraffin. From the last named crude, excellent lubricating oils can

be obtained. The oil from the island of Tarakan (East Borneo) is well known as an excellent liquid fuel. It has a specific gravity of 0.95 and can be employed as fuel or as oil for Diesel motors after having undergone a very simple treatment by which it is cleared of impurities such as sand and water. There is a large petroleum refinery located at Balik-Papan in East Borneo and in order to produce a kerosene which can compete with the best American brands, one of the leading kerosene companies has built a special factory in Balik-Papan. The kerosene thus produced equals the best in the world and is sold in large quantities in Asia. There is a paraffin factory at Balik-Papan which may be considered one of the largest and best-equipped paraffin works in the world. A paraffin-wax candle factory there manufactures for export. Large work shops and factories for the making of tins and cases for handling petroleum products are located in Balik-Papan, and factories for making iron drums and wooden barrels are also under construction.

Tanning materials are produced on the island, but the number exported is not large. Of the two factories situated in the Western Division of Borneo one has had to close down on account of the forests in its vicinity having been exhausted of mangrove-cutch. The process of manufacture employed in the other establishment is kept secret as far as the mixing with other tanning materials is con-cerned. The finished article is a dark brown solid mass with a shiny shell-like appearance on the plane of fracture and contains on an average of about 50 per cent of tannin on the air-dried cutch, which contains 20 per cent of moisture. The percentage of tannin, however, is often as high as 70 per cent. Large quantities of mangrove-cutch find an outlet at the port of Pontianak in the Western Division, shipments being made to the United States, Great Britain,

Japan, Australia, and a few other countries.

Oilseeds collected in the forests of Borneo are known as Tengkawang, and produce what in Europe is called Borneo-tallow. The seeds are obtained from a certain number of trees of the Diptericarpaceae family, which are common throughout the island. The fruits of the different species vary in size and range from that of a fowl's egg to that of a marble. The fruit consists of two oil-consists oil-con taining seed-lobes surrounded by a hard shell to which wings of varying sizes are attached. The most cultivated of these species is the Shorea stenoptera which produces the largest fruits with comparatively small wings, the size of which is not much larger than the fruit itself. The characteristic of the native is to carry on the cultivation of this and other products in the most haphazard sort of fashion. Even their rice crops they do not cultivate permanently, but go from place to place cutting down forests, burning the timber and undergrowth which is their sole fertilizer. They never harvest more than two, or at the utmost, three crops on the same land, and then move further afield. Simultaneously with, or shortly after, the planting of the last crop, the natives often plant fruit trees, ratan, gum benjamin and similar plants. Then the tribe moves on and the trees are left uncared for till, after the expiration of several years, it returns to gather fruit. It is in this way that the Shorea stenoptera, before mentioned, can be said to be cultivated in the western part of Borneo. When the fruit has become fully ripe it drops to the ground. Then the whole tribe, men, women and children go to live in the forest for the time being.

The damar produced in Borneo differs from the Sumatra product in the respect that it is slightly cheaper. Sumatra damar when broken shows an even color on the plane of fracture, whereas with Borneo damar the surface glitters on account of the many minute air bubbles it contains, nor is the chemical composition of the two products identical. The damar is shipped to Java in its crude state. There Sumatra damar is carefully kept separate from the Boreno damar on account of the fact that both kinds do not produce the same clear varnish.

There are a few European-owned gambir plantations in the Western Division. A properly managed plantation has a life of from 15 to 20 years, and some pay only during 5 or 6 years. Crops are often badly damaged by excessive rains and excessive droughts. Borneo gambir is sometimes adulterated with a yellow clay, which has done much to hurt its reputation. Gambir has many uses, the principal being as a dve for silks and military equipments. and as a tan for fishing nets and leather.

The western and extreme south-eastern parts of the island produce much pepper, although in the latter parts the culture is not in a flourishing condition.

In order to provide the province of Western Borneo with a means of communication between the coast and interior, a regular transport service was established in 1911 by the government on the Kapoears rivers between Pontianak and Sintang. It was originally intended for the conveyance of government officials and the carrying of mails or goods. Private parties may now make use of the boats on payment of a fixed charge. The mode of travel is by house-boat in tow of a tug.

### ISLAND OF CELEBES **Dutch East Indies**

Macassar Ports:

Population: 1,500,000.

Area: 70,000 square miles, approximate.

The Strait of Macassar separates this island from Borneo on the west, and the Strait of Moluccos on the

The principal exports are pepper, cloves, cinnamon bark, cutch, copra, timber, shells, nutmegs and mace, rattans, ebony, cocoanut oil, peanuts, gum copal, hides, skins, kapok, maize. Imports are cotton goods, hardware, petroleum and general items.

The soil is extremely productive. Trees producing nutmegs and mace grow abundantly, and the natives usually have the trees around their homes. In this way the tree is cultivated with a minimum of trouble and expense

and throws off a constant regular profit.

Considerable salt manufacture is carried on in South Celebes which is the principal source of supply for the surrounding islands. Gold mining in the vicinity of the northern peninsula, which once promised big returns, is on the decline and at present there are only about three companies operating.

### **MALAY PENINSULA**

Ports: Penang, Singapore, Port Swettenham.
The Malay Peninsula is the largest rubber producing and rubber exporting country in the world. Ten years ago the production was small as compared with that of Brazil, which was then the principal source of supply. Its advent to first place as a rubber producing country is due to its favorable climatic and soil conditions.

Penang is a fine city, but a traveller describes the hotels as "something to remember," chiefly on account of their exorbitant tariffs. The railways, which are government owned, are, however, building first class hotels in various cities and those now being operated are superior in every way, being fine buildings with good tables and excellent accommodations.

accommodations.

There are 1,000 miles of railways and 2,000 miles of exceedingly good roads on the Peninsula. In 1916 the Peninsula produced \$87,500,000 worth of rubber and \$37,500,000 morth of tin hesides many other products. The people are very prosperous since the development of the rubber industry. A native with 20 acres of rubber trees is a magnate; he is comparatively wealthy and does not need to work himself. In fact the Malays are not fond of hard work, but they are good sports and will put any

amount of energy into motoring or any form of diversion.

The population of the Federated Malay states is 1,200,-000 and of the whole Peninsula (which is 500 miles long) a little over 2,500,000. As the country gets opened up the great difficulty will be the lack of labor. The natives are very honest. Singapore is one of the largest ports in the world. Dozens of steamers go in and out every day. total annual trade amounts to about 14,000,000 tons.

A new record was made by the Federated Malay States in trade statistics for 1917. The aggregate value of trade was £40,467,196, compared with £34,069,124 in 1916 and £27,425,843 in 1913. Exclusive of movements of bullion and

specie, imports amounted to £8,547,201, an increase of 5 per cent on the previous year and exports to £31,736,011, or an increase of 23 per cent on 1916.

The dwindling imports from the United Kingdom, which in 1914 amounted to 21.99 per cent of the total, have fallen to 9.75 per cent, and in the main these have been taken up by Japan, Australia and the United States.

Manufactured articles imported increased in value from £2,543,243 in 1916, to £2,770,657 last year, but in considering these figures it must be borne in mind that there was a continued upward tendency in the value of most com-

modities imported.

Turning to the export trade it may be noted that of the total value of £31,736,011, rubber accounted for the large sum of £22,098,960 and tin and tin ore, £8,519,757. Of the other exports copra headed the list with £292,265. There were increases in ten, and decreases in twelve of the principal items of export, the more noticeable declines being in tin and tin ore, rice and padi. The shortage in the output of the metal has been continuous since 1914, and is attributed to the want of fresh capital to develop new propositions, the increased cost of mining material and the difficulty in obtaining requisite machinery. Mining labor force shows a reduction from 171,689 in 1914 to 121,623 in 1917.

The following table shows the growth of the rubber

exports:	Tons.	Value.
1908	1,413	£531,765
1913	23,465	6,610,795
1914	30,697	6,361,362
1915	44,523	10,897,365
1916	62,764	17,219,232
1917	<i>7</i> 9,831	22,050,727

Among other exports from these Malay States were areca nuts, coffee, gambier, pepper, sugar, tapioca and tungsten ores. Eighty-six per cent of the trade is carried on through the ports of the Straits Settlements, principally Singapore and Penang.

### PHILLIPINE ISLANDS

#### Steamer Routes

From Manila regular services are maintained around the coast by the steamers of the Smith, Bell & Co., and other local interests. Messrs. Smith, Bell & Co. are Manila agents for direct services operated by Jardine, Matheson & Co. between Hongkong and Manila. This connection affords Manila passengers communication with all the coast via Hongkong, through many of the regular steamship companies, such as the Canadian Pacific Ocean Services, Ltd., the Toyo Kisen Kaisha, Pacific Mail S. S. Co., China Mail S. S. Co. which call at Manila in their ordinary voyages to and from American and Oriental ports.

Ports: Cebu, Iloilo, Manila. Population, 8,000,000.

One of the results of the Spanish-American war was the annexation of the Philippine Islands from Spain. The United States took them with an eye to getting a good coaling station, but she got more than that, so much more that even yet the people of America have only a slight idea of the great hidden wealth of the island.

#### Trade for 9 Months of 1918

The first nine months of 1918 was a remarkably prosperous period in the commerce of the Philippines. During that period the value of the exports alone amounted to \$101,000,000, or more than that of the entire year of 1917. While the exceptionally high figure is due in a large measure to the prevailing high prices paid for the products of the islands, it is also based upon an exceptionally large volume of business done.

The following table shows the values of the leading imports and exports for the nine months ending September 30, 1918, as compared with the values of the same items for the corresponding nine months of 1917:

### Leading Imports for 9 Months Ending September 30,

	TATO			
Articles.	1918.	1917.	Increase	%
Cotton and Mfrs of	\$21,529,600	\$14,279,500	\$7,249,999	27
Iron and Steel and Mfrs of	8,532,500	3,720,000	4,812,500	64
Rice		4,266,000	1,027,000	12
Autos, Parts and Tires for		1,138,000	1,167,500	51
Wheat Flour		1,300,000	968,500	37
Silk and Mfrs of	2,102,500	1,501,500	600,500	19
Fish and Fish Products		646,000	4,988,000	18
All Other Imports	24,087,500	19,096,000	4,988,000	13

Total Imports ......\$67,955,500 \$45,947,000 \$22,003,500 24

### Leading Exports for 9 Months Ending September 30,

Articles.	1918.	1917.	Increase	%
Cocoanut Oil\$	21,003,000	\$ 8,201,500	\$12,799,500	78
Copra	4.968.000	5.194.500	226,500	2
Embroideries	1,530,500	1,301,500	229,000	9
Hemp	45.866,000	32,266,750	13.599.250	21
Sugar	10,844,500	10,251,500	593,000	3
Tobacco Leaf	5,417,000	1,588,500	3,828,144	120
Cigars	5,069,500	3,341,500	1,728,000	26
All Other Exports	6,771,000	5,477,750	1,067,105	11

Total Exports ......\$101,469,500 \$67,623,500 \$33,846,000 25

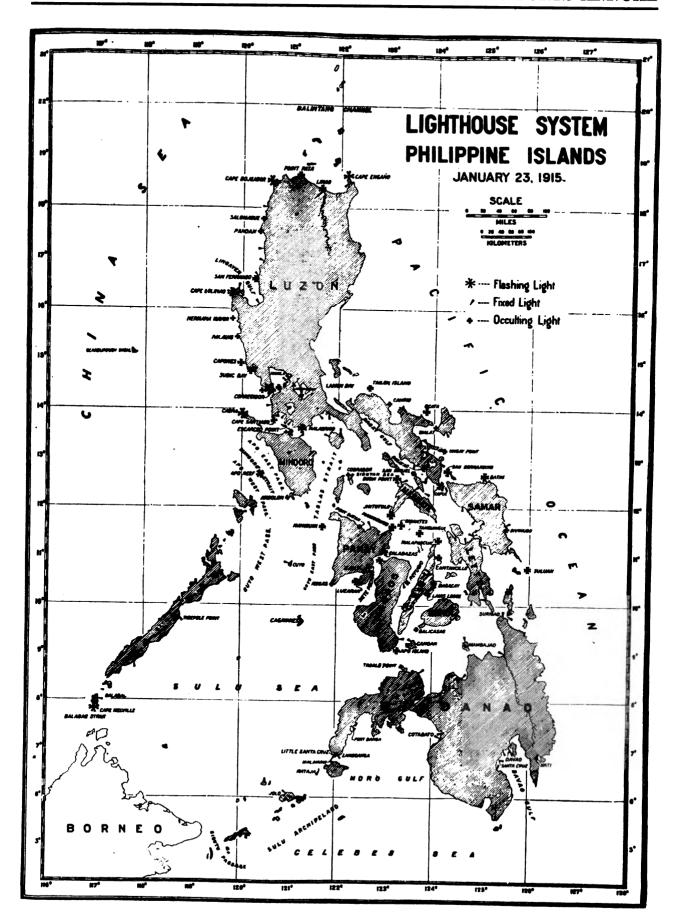
### Relation with U.S.

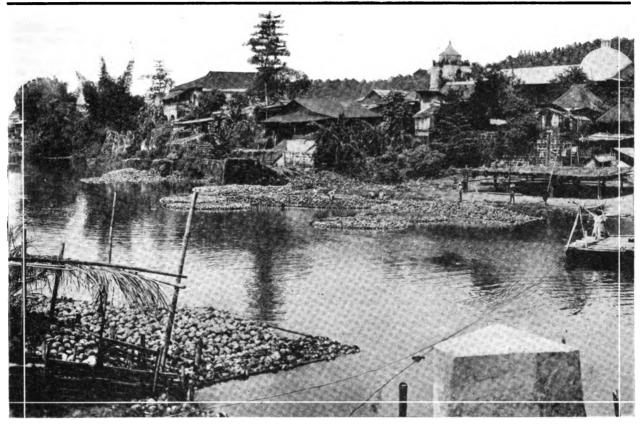
The laws and regulations that govern commerce between the United States and the Philippine Islands have their origin in and are under the control of the government of the United States.

The customs tariff of the Philippine Islands that was enacted by Congress at Washington in 1909 is, with minor modifications, in force today. It was enacted at the same



Plewing and Harrowing a Rice Field—Copyrighted by Underwood & Underwood





Sceno on Pagsanjan River Showing Rafts of Coccanuts on Way to Market

time as the so-called Payne Bill, in which is contained the provision admitting, with some limitations, products of the Philippine Islands into the United States duty free. These limitations refer to sugar and tobacco, while manufactures of the Philippine Islands must not contain more than 20 per cent of foreign material, if they are to enjoy the free entry privilege. Rice was not included in the general exemption.

The Philippine Customs Tariff contains a provision for the admission into the Philippine Islands, duty free, of all articles the growth, product or manufacture of the United States. There were no limitations, as in the case of Philippine sugar and tobacco nor of the amount of foreign material that might be employed in the manufacture of an article that was to enter duty free.

article that was to enter duty free.

The United States Tariff Act of October 3, 1913, removed the limitations as regards Philippine sugar and tobacco although it retained that relating to the quantity of foreign material that might be used in manufactures in order to entitle them to the free entry privilege.

order to entitle them to the free entry privilege.

The Philippine Customs Tariff Act was designed primarily as a revenue-producing measure, and it provided duties on practically all imports into the Philippine Islands with the exception of a few items, the most important of which are onions and potatoes. But practically all articles the importation of which into the islands is of consequence were made subject to duty except when coming from the United States.

United States.

The Tariff Act of the United States was framed on an entirely different basis. The free list covers items included in 271 separate paragraphs numbered from 387 to 657, both inclusive. This free list applies to nearly all of the products or possible products of the Philippine Islands, hence the exemption from the payment of duty that is accorded to Philippine products is effective or of benefit with respect to comparatively few articles.

respect to comparatively few articles.

It is of note that for the fiscal year ended June, 1916, 67.91 per cent of the total imports of the United States were included in the free list.

When the reciprocal arrangement was effected by the passage of the acts referred to, the duty on sugar in the United States was \$1.685 per one hundred pounds on the

basis of 96 degree polariscopic test. This duty was reduced by the tariff act of October 3, 1913, to in the neighborhood of \$1.25 per hundred pounds.

### Contains 5,000 Islands

The Philippines are the largest island group of the Malay Archipelago. Luzon is the fourteenth in size and Mindanao the sixteenth among the large islands of the world. The group is nearly as large as the New England states, New York and New Jersey. If its northern edge were placed upon Chicago its southern edge would touch Cuba. The climate is tropical and the general temperature between 60 and 100 degrees Fahrenheit. There are 5,000 islands in the group, some of which are merely large rocks. The people are mostly Malayan and the population is densest in Luzon and the central islands. The characteristics of the Filipinos are similar to those of the Javanese and the two races are closely related. The Chinese population on the islands numbers about 50,000, and the white, Spanish, American, British and German, about 25,000. The population of Manila is 234,500. Cebu, Iloilo and Manila, the capitals, are important seaports of this group.

An important Philippine industry is the raising of rice, of which there is an enormous production, and as it is the staple product, there is always an enormous demand for it. There are two crops of this grain grown annually. Large quantities of rice are also imported, chiefly from Cochin China.

Among the chief exports from the Philippines are the products of the wonderful Abaca palm, on which the islands have the monopoly. The leading product of this palm is Manila hemp, well-known for its superiority among hemps. Cultivation of this plant was tried in the West Indies and Florida with some success, but the hemp produced was inferior to that produced from its native soil. The average height of the Abaca is from 5 to 10 meters. A cluster of from twelve to thirty plants is generally produced from a single root stock. They are about 2.5 to 6 meters long and of a cylindrical shape, with colors that range from dark purple to green and are formed by the overlapping of the leaf sheaths. Estimates of the Bureau of Agriculture show that in 1916, 2,471 acres were planted

with an approximate yield of 152,756 metric tons. The value of the amount exported was \$26,692,291. Comparative tests made between English hemp and Abaca rope show tive tests made between English hemp and Abaca rope show that the latter 7.5 meters in circumference and 3.35 meters long, stood a strain of 2,127.27 before breaking, while the English rope of the same dimensions broke with 1,766 kilos. The first returns from an Abaca plantation may be expected in from 20 months to 3 years after the planting and a continuous cutting about six to eight months thereafter takes place. The fibre requires to be extracted about forty-eight hours after cutting the stalk, otherwise it have mental sizelessed and a weakened and the outer sheaths. becomes discolored and weakened and the outer sheaths dried and decayed and thereby lost.

dried and decayed and thereby lost.

Raw silk is now being produced extensively in the Philippines and efforts are being made to promote the article along commercial lines. The industry as yet is in a primitive state, although already of considerable magnitude.

Kapok, a valuable vegetable down, which covers the seeds of a species of silk-cotton tree, is imported from the Philippines. The culture of the silk-cotton tree has proved

successful in the islands, and the silky fibre, which is derived from it, is used largely for stuffing pillows, mat-

Raw cane sugar comprises over one-fifth of the exports, the chief buyers being the United States, Great Britain, Spain and Japan. This product fetches only a low price on account of its being a coarse grade.

Pepper, cotton and coffee are raised, but not to such extent as to make them of any great commercial importance so far.

For a considerable time the United States used one-fourth of all Philippine exports, but the Philippine im-ports from this country are small. The chief imports are

machinery, cotton cloths and hardware. Great Britain, Japan and Spain also import considerable from these ielande

The forests of the Philippine Island contain untold wealth in many of the best hardwoods, cabinet and dye woods, many of which up to the present have been little utilized

Calantas. Toona calantas and other species is a Philippine wood closely related to Spanish cedar of tropical America (Cedrela odorata). It is used in the manufacture of wardrobes, bookcases, clothes chests, etc., as its strong odor keeps out moths and weevils. This wood is the only wood used in Manila for high-grade cigar boxes. Of all the numerous hard, heavy, durable woods of the Philippines, Molave (Vitex parviflora, and other species) is the best known. Throughout the entire group its name is a synonym for strength and stability. Molave is extremely hard and heavy. It is of a very fine texture and ranges from a pale straw color to a light brown, and is rarely attacked by insects unless decayed beforehand. Its one and only defect is its lack of toughness which makes it unfit for long beams. It is put to almost every use ever conceived in construc-tion, as well as for agricultural, industrial and household instruments, and for a high grade of furniture. This wood is easy to work with any kind of tools and would make a fine veneer where a light-colored, fine-grained wood is other species of the same genus) are woods much harder and considerably heavier than those of the lauan group. Apitong ranges from a pale grayish red to a dark chocolate color. It is rather close but straight grained and when strictly quarter-sawed has often a very pretty wavy grain forming diagonal stripes across the board. Though it is

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\*The column with the caption "Price" is for the unit of cost, such as 15 cents per kilo, and the column with the caption "Amount" is for the total cost, such as \$1,000. INSTRUCTIONS

This form of invoice must be used only for goods obtained by actual purchase by a person in the Philippine Islands of a seller in the United States.

It must be made out in triplicate, signed by the purchaser or seller, or agent of either, and sworn to before a collector or deputy collector of customs, or United States commissioner, who will retain the original, deliver the duplicate to the person presenting it, and send the triplicate promptly by mail, or by the master of the vessel, to the Collector of Customs at the port of entry in the Philippine Islands. It must show the names of the seller and purchaser, the time and place of purchase, the actual cost of and charges on the merchandise, and contain a correct description of the merchandise, with the marks and numbers and gross and net weights in the terms of the Philippine tariff, or quantities, as the assessment of duty may require.

Customs officers will make no charge for the jurat.

### OATH OF PURCHASER OR SELLER, OR AGENT OF EITHER

at.......whence said merchandise is to be shipped to the Philippine Islands, that said out is that which was actually paid or is to be paid for said merchandise.

.....

somewhat resinous the resin does not break through the varnish if the lumber is thoroughly dried before finishing. It is used in the Philippines to a very considerable extent for flooring and other interior work, as well as for a great variety of medium-grade furniture. The darker grades of apitong would make a very substantial and handsome ap-pearance. Benguet Pine (Pinus insularis) and Tapulao (P. mercusii) are found only in three strictly limited regions, and never has the timber been brought to the Manila market. The heartwood is heavy and very resinous, re-resembling that of the yellow pines of America. In the Mountain Province, where through a certain region almost no other large trees are found, Benguet pine is used for all purposes. These are only a few of the wonderful and useful trees that grow on these islands, many of which are almost entirely unknown to the outside world.

The cocoanut, which grows profusely on the island, cultivated and uncultivated, has now no waste attached to it and is put to more uses than it ever has been before. From this nut is now obtained copra, cocoanut oil, soap, carbon, and cocoanut mats. The copra is the dried white meat of the fruit for making cocoanut oil (for which now a better process has been discovered which probably will ultimately eliminate the use of copra). Some of the white meat is sent to Marseilles for the French soaperies. During the war the shell was utilized by the government for the carbon in the making of gas masks for the soldiers. The husk part on the outside of the shell is used in the making of cocoanut mats. This nut is growing in importance as a Philippine export.

## Tobacco Industry

as well known as the Havana cigar. The best Philippine as well known as the Havana cigar. The best Frinippine tobacco is grown in the wide valley of the Cagayan, in north Luzon, and is shipped to Manila from Aparri for manufacture into cheroots and cigars. This tobacco holds the place in eastern trade, as most of the tobacco raised south of Manila is not so fine and much of this is shipped in leaf to Spain. In 1914 only 59,338,293 cigars were shipped to the United States from the Philippines, but in 1917 the exports increased to 216.124.310.

The cocoa tree grows well with the proper care. A good healthy tree will yield the planter a good profit if favorably situated, but if in a poor location which makes it a prey to the myriads of insect pests and fungus diseases the profit will be greatly reduced. The failure of cacao to rank as one of the major crops of the islands is accounted for by the fact that the tree requires more special attention and constant care than the Philippine planter is accustomed to give to his plants.

There are between two and three hundred varieties of this plant. The young leaves are very sensitive to the wind and the planter must take great care to erect wind screens on his plantation. The roots also are a sensitive part of this plant and suffer severely from overheating due to the cracking of the earth. The main roots seldom penetrate the ground below 1 meter and the feeding roots obtain most of their nourishment at about thirty centimeters within the soil. A deep, semi-alluvial soil at the bottom of narrow valleys produces the better and larger plants. The seeds are taken only from perfectly developed mature fruit of vigorous, highly productive trees.

A Philippine article that serves every purpose to which the Japanese sedge mat is put is made from the common

Invoice of account of	••••••	•••••••		, at	thipped by		PINE ISLANDS
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"Amount" is form of a seller in the It must be deputy collector presenting it, a of entry in the shipment to the marks and num may require.	or the total va of invoice is for the United State made out in the or of customs, and send the tre Philippine Islate Philippine Industrial of the or Philippine Industrial of the officers will ma	due, such as \$1,0 or merchandise of ies. riplicate, signed be or United State riplicate promptl ands. It must s slands, with all	INST obtained othe oy the manufa s commission y by mail, or how the actu- charges there ights in the te- the jurat.	FRUCTIONS rwise than by acturer or own ter, who will r by the maste al market value on, and contains of the Ph	actual purch ner, or agent of retain the ori or of the vesse ue or wholess ain a correct nilippine tarif	f either, and swo ginal, deliver the l, to the Collecte the price of the m description of the f, or quantities, a	in the Philippine Islands rn to before a collector or e duplicate to the person or of Customs at the port herchandise at the time of he merchandise, with the as the assessment of duty
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Transporting Sugar Cane-Copyright by Underwood & Underwood

the industrial division of the Bureau of Education and it has been introduced into the households,—principally through children. The plant is extremely plentiful and grows to the size of about a meter. When mature it bears at the top of its stem a flower cluster. It also bears a few short basal leaves and the flower blooms in from July to December. The balangot stem is used either whole or split in two or three parts. The rough edges of the split straw curl up when dried in the sun and are at present used in the making of slippers, handbags, hats, and similar articles. There is a good chance now for the balangot industry to start on a proper commercial scale.

Guinea grass (Panicum maximum) is a prominent member of a family of grass plants, numbering approximately 600 species, mostly tropical. This variety, which is perennial, is said to be a native of tropical Africa. Some stools (roots) were brought from the Hawaiian experiment station in 1905, twenty arriving in good condition. These were divided and planted and at frequent intervals were re-divided and replanted so that in the following year over half a hectare was growing. From this planting various experiment stations were supplied and afterward private individuals until by July, 1909 about 61,100 roots had been distributed. At this time the grass forms one of the important fodder crops of the Islands. Guinea grass appears very palatable to caraboas, goats, hogs, cattle, horses, mules, guinea pigs, and chickens, and this is one of the main considerations of a good forage grass. Another is the nutriment obtained. There is a general idea that this grass is grown principally by sewing seed, but so far in the Philippines this method has not been practised. In many parts of the world it is reported that the plant does not hear seed, although seed is regularly produced in the Islands. The seed matures very unevenly and shatters easily so that the only practical method is to gather the heads as they ripen from day to day, have them dried and then threshed. The seed may be planted very similarly to maize. Experiments have shown that a crop of 41 metric tons per hectare can be raised in 61 days and with ordinary care an annual crop of 120 tons per hectare can be reasonably expected.

The export of hats from the Philippines has greatly increased in the past ten years. In 1907-8 the number exported was 472,387 valued at \$169,882. In 1917 the figures were 1,724,010 hats valued at \$1,333,388, a gain of 265 per cent in number and 685 per cent in value.

That the Philippines are wonderfully rich in potential mineral wealth is being demonstrated from time to time

as reports of new discoveries are made public. Gold mining was the first of this class to receive attention, possibly for the reason that the presence of this precious metal in placer ground had been evidenced for years prior to American occupation.

With the American troops that came to the islands were many men conversant with mining in its various branches and a number of these began immediately the work of prospecting for gold or operation of claims that had already been located or developed. This work was extended from placer to quartz mining and as a result the Philippines now have a number of substantial quartz mines that are producing considerable quantities of gold and the present development of which gives assurance of a supply of ore sufficient to return large revenue for many years to come.

It is well known that there are extensive iron and copper deposits at various points in the Islands, although these have been worked but little. Among the non-metallic minerals, the presence of which in large deposits has been amply demonstrated, are asphalt, sulphur, oil and asbestos.

The Philippines for a number of years past have produced small quantities of sesame seed and cassava—the former is a product valuable principally for its oil, while the latter is manufactured in the form of tapioca, flour, etc., for the market. Results have shown that the Islands are well adapted to the growth of these two products and there has been some export of sesame seed in the past.

### HAWAIIAN ISLANDS

### Steamer Routes

Matson Navigation Co., provides first class regular service between San Francisco and Honolulu. The steamers of the Great Northern-Pacific S. S. Co. provide similar service from Astoria and San Francisco to Honolulu via San Pedro and Hilo, from November to May. In addition to these purely local services the Oceanic S. S. Co. (Spreckels Line) to American Samoa and Australia, and the Toyo Kisen Kaisha, Pacific Mail S. S. Co., China Mail S. S. Co. and the Java Pacific Mail Service (Rotterdam-Lloyd and Nederlands Royal Mail Line) make regular callings on their voyages to and from San Francisco, while the Canadian-Australasian Royal Mail Line affords regular sailings to Victoria, Vancouver, Suva, Auckland and Sydney. The Great Northern Pacific S. S. Co.'s service was suspended during the war.

Ports: Hilo, Honolulu, Kahului, Mahukona, Port Allen.

The Hawaiian Islands are located very conveniently and may be considered as the one place not too far from all the principal trading ports on the Pacific. They became a territory of the United States, through annexation from Spain in 1898. Geographically the Hawaiians consist of a group of twelve islands of which eight are inhabited, and are here given in the order of their size: Hawaii, Maui, Oahu, Kauai, Molokai, Lanai, Niihau, and Kahoolawe. That Hawaiia's geographical location is an inestimable advantage is shown by an examination of the relative distance of the islands from some of the most important of the Pacific ports and countries. Honolulu is 2,100 miles from San Francisco and is a port of call for all ocean going vessels travelling that way; it is 2,460 miles from Victoria, B. C., and 3,400 miles from Yokohama, and 4,700 miles from Manila. In a northerly direction the nearest land is the Aleutian Islands 2,000 miles away. Eastward the nearest land is the North American continent 2,000 miles away, and westward the Philippines 4,500 miles distant. A small unimportant group of islands is the nearest southerly point. Australasia is 4,410 miles.

The principal export of the islands is raw cane sugar of which this territory is the third largest producer. Sugar comprises nineteen-twentieths of the total exports of the islands. The estimated production of sugar for 1917 was 643,620 tons. The sugar plantations are mostly owned by stock companies, people of all classes holding stock. Sugar cane was found growing in Hawaii at the time of discovery and was first exported in 1837. The Reciprocity Treaty of 1876 gave great force to the sugar industry, insuring it a market. In 1915 there were 55 sugar plantations on the Hawaiian Islands. The yearly production of molasses obtained from the sugar averages 5,000,000 gallons. The valuation of the private and incorporated sugar properties is \$85,000,000, and 200,000 acres of land are devoted to the growing of the cane. Half of this is reclaimed land. Irrigation is one of the important phases of the industry. The irrigation water is obtained largely from numerous artesian wells. The first crop of sugar is ready for the mill in upwards of 18 months. This crop is followed by a rattoon crop fourteen months later and by another rattoon crop about 18 months hence. In some places the third rattoon crop is not profitable, but in others so much new surface soil is washed down from the mountains every winter making possible as much as seven or eight rattoon crops.

### Pineapples Rank Second

Pineapples rank second as a product of exportation and the islands abound in plantations which raise this fruit. About 10,000 acres of land are now given to pineapple cultivation and canned fruit valued at \$5,986,190 and fresh fruit and pineapple juice valued at \$95,958 were exported in 1915. There are 11 canneries in the islands. Honolulu has the largest cannery in the world. No pineapples grown anywhere in the world are said to have a better flavor than those cultivated in the Hawaiians. The pineapple plant is most productive at an elevation of from 500 to 1,200 feet where there is an average annual rainfall of 35 inches or more. The plants are grown in numbers of from 2,500 to 12,000 to an acre according to the size of the fruit desired. The first crop varies from 10 to 25 tons to the acre and matures in from 18 months to 2 years. A rattoon crop of from 8 to 18 tons follows a year later. A second rattoon crop is generally grown and then the fields must be reset.

Large crops of bananas and rice are grown in Hawaii for export and much attention is paid to the raising of the various tropical fruits suited to the climate, especially bananas, which require little cultivation and of which nearly every house has its tree.

Rice cultivation is an old Hawaiian industry carried on almost exclusively by the Chinese who use the Chinese methods. As much as 12,000 acres was once devoted to this industry and it once ranked second only to sugar, but owing to the steady decrease in acreage and the advance of the pineapple industry, the latter has taken

its place. However, the rice industry in Hawaii does not thrive. This is largely because the Japanese do not like the taste of the Hawaiian rice and import Japanese rice, and on account of the fact that the Chinese cling to the primitive methods. These conditions have enabled the Texan and Californian planters to nearly put the Chinese growers out of business.

Sisal raising is another expanding industry and there are now 3,000 acres devoted to its cultivation yielding an annual output of several hundred tons of fibre. Sisal requires little water and can be raised cheaply on many of the nearly arid tracts of land. Hawaiian fibre is of a very high quality and is much preferred on the San Francisco market to that of Mexico from which comes 98 per cent of the sisal imported by the United States.

### Tobacco Needs Advertising

Another industry is the cultivation of tobacco. Fine grades of tobacco are grown on the islands and there are some 30,000 acres of land fit for the plant. As yet the growers have not had the means to advertise their product properly, which is of utmost importance and owing to the slightly different flavor of Hawaiian tobacco it is necessary that it should be well introduced to get a good start.

It is also considered that lack of advertising is the primary reason why Hawaiian coffee is not more universally known. Coffee has been cultivated in Hawaii ever since 1817. The low wholesale price has cut down the profits to a minimum and somewhat discouraged the establishment of new plantations. The deliciousness of the coffee points to a bright future, however, when the proper methods for pushing it are adopted.

Banana exportations amount to over 230,000 bunches yearly and 800 to 900 bunches per acre is an average crop. The tree fruits about a year and a half after planting and is then cut down to give room to the suckers, which spring from the roots. Over fifty varieties are grown at various altitudes, but hardly more than half a dozen kinds are known commercially. This is truest of the cooking variety which many people think an improvement on those that are eaten raw. It is believed that a market for the newest varieties of banana could be very successfully created. Some people are viewing this industry in a light that if assurances could be made of a perpetual cultivation of 20,000 acres of this fruit, a special steamer service would spring up to transport to the mainland this fruit alone, as a crop of such size would easily fill at least one boat a month.

The foregoing are only a few of the crops raised and exported and many more are being experimented with, such as cotton which produces a more valuable lint than any grown in the Southern States. This crop, though, is affected by a boll worm and can only be grown successfully where a parasite thrives that will exterminate the worm. Casava, Manila hemp, citrus fruits, corn and forage plants are among the more important of the crops being raised.

### U. S. Provides Most of Imports

The chief imports are lumber, fertilizers, wearing apparel, dry goods, tobacco manufactures. All Hawaiian imported lumber comes from the United States, fir, spruce, and cedar from Puget Sound, and Redwood, hickory oak, and ash from California. Coal is imported from Australia, bagging from India, and cement, tin plate, and crockery from Europe. The United States provides a a little less than three-fourths of Hawaii's supplies and Great Britain a little over one-tenth.

Over 80,000 tons of fertilizers are prepared in the Hawaiian Islands annually and other large quantities are imported from the United States and Europe. Planters devote large sums to the scientific study and improvement of the soil and in cultivating their land to its highest producing power, and yet with an eye to economy. The great need and use of fertilizers is on account of the soil having to rest between the planting of crops and the fact that the crops are not changed. Sometimes as much as \$40 worth of fertilizer per crop is used to every acre planted.

Although the Hawaiian Islands are nearly twice as large as Porto Rico the population is less than half as much. The population of Hawaii has fluctuated greatly. In 1778 it was 250,000, while in 1878 the estimate was 57,985. Since then it has been steadily increasing until today the islands have 230,000 inhabitants. Of this number 24,120 are native Hawaiians (the race is fast decreasing) 14,800 are mixed Hawaiian and Caucasian or Asiatic blood; 22,650 Portuguese; 5,080 Porto Rican; 4,210 Spanish; 25,600 Caucasian (principally American); 21,770 Chinese; 91,490 Japanese; 15,220 Filipino; and 5,270 of other races. The native-born population in 1910 numbered 98,157, and the foreign born 93,752. The Hawaiian Islands were settled on as early as 500 A. D. which has been proved by the discovery of bones under lava and coral beds. The Hawaiian race is a mixture of Samoan and Maori. The native language is a dialect of the Polynesian tongue.

The animal life of the islands is not great and at the time of discovery the Hawaiians contained dogs, hogs, mice, wild and domestic fowls, and migratory birds. A few perfectly harmless lizards are the only reptiles. Snakes are unknown. There were about seventy varieties of wild birds, many of which, owing to the recessions of the forests are now extinct. The mosquito has been imported, fortunately, though, not the malarial mosquito. Also blights have come in on foreign plants, but have been quelled in the nick of time by parasites. The only type of animal life peculiar to Hawaii is the land-shell (achatinella) of which there are 800 known species. These shells grow on many varieties of vegetation. A second cousin to this peculiar animal is the unique ground-shell. These shells often have wonderful coloring.

### Americans Run the Ranches

The flora of the Islands apart from being very beautiful is also very varied. There are wild, indigenous plants growing on the mountains, among which are very ornamental and useful trees like the koa, known as the Hawaiian mahogany, which is manufactured extensively into furniture. It has a beautiful golden brown color, full of light and shadows, and excellently grained. There is also the ohia, which is somewhat lighter than the koa and which is very hard. It takes a high polish and is used for pannelling furniture, floors, as well as for railway ties and permanent fence posts. This tree bears a red fruit that is cool and refreshing although somewhat tasteless. Another group of plants are those that were introduced by early Hawaiian voyagers from the south. They are useful plants such as the breadfruit, cocoanut, taro, mulberries and fibre plants for the manufacture of fishnets, ropes, and mats. Everything tending toward the preservation and extension of the forests is being put into effect and large barren tracts are now being planted with eucalyptus, ironwood, algaroba, and other important trees, with a view towards replenishing the now diminished forests.

Ranching in the Hawaiian Islands is almost entirely in the hands of Americans. This business has between three and four thousand acres devoted entirely to it. Cattle, sheep, hogs, horses and mules, and poultry are raised. Until recently the home ranches had been able to supply the whole of Hawaii's beef supply, but to keep up with the enormously increasing demand ranchers are finding it necessary to plant large quantities of forage plants to guard against drouth, since the grazing lands will not themselves supply much more stock. The sheep that are raised are not in sufficient quantities to supply the islands and lately much mutton has been imported from Australia and New Zealand. People are just beginning to realize the necessity of raising sheep that have good wool, so that wool intended for export will doubtless be of much better grade than in the past.

In 1911 enough hogs were raised for the first time to cope fully with the islands demand, but the sudden increase in the army again put the demand ahead of the supply. Hogs now, however, are being raised in much larger quantities. Mules and horses are anually imported for use as draught animals, but it is thought that a few years in the future island ranches will be able to fill the entire

demand. To a certain extent, poultry raising is carried on, but quantities of chickens and eggs are still being brought from the mainland. Poultry diseases have caused trouble, but to no greater extent than elsewhere. It seems that a good opportunity awaits a few persons expert in the business.

Now, to take the islands one by one in order of their size, Hawaii naturally comes first, as it is larger than all the rest of the Hawaiian Islands combined and yet it is the youngest geologically. This island is of volcanic origin. The island is a little smaller than the state of Connecticut and larger than Porto Rico and it covers 4,015 square miles. It has a population of 55,382. Hilo, one of the most important cities in the Hawaiian group, is situated in Hawaii at the northeasterly part of the island and has a population of about 7,000 inhabitants. The three great mountains of the group are situated on this island—Mauna Kea, 13,825 feet; Mauna Loa, 13,675, feet, and Hualalai, 8,269 feet above the sea level. On the two higher mountains it snows the year round in places and increases much in winter. The soil of Hawaii is wonderfully fertile and as a whole it is a beautiful island.

#### Maui is a Double Island

The island next in size is Maui, covering 728 square miles. It in reality is a double island, the much smaller and northwestern part being as old as Oahu and, therefore, showing great erosion, the southeastern and comparatively new part being taken up to its entirety by the only superficially eroded dome of Haleakala. These two parts are joined by a low isthmus plain made by lava flows from the east which gradually filled the channel that originally separated the two islands. On this low isthmus are sand dunes sometimes a hundred feet high The population of this island is upwards of 30,000 and one of the chief towns is Lahaina. Lahaina's prosperity is due to the fact that it was a regular port of call for whaling ships, of which there were sometimes fifty anchored off shore. The town has gradually fallen away, though, and is now strung out along the shore, most of its former site being taken up by the cane fields of the Pioneer Mill Company. On this island are some of the most important of all Hawaiian plantations. Large rubber plantations have been laid out on the northern slope of Haleakala and in the region to the east. Above Haiku there is already extensive pineapple planting. On this island is situated the massive peak of Puu Kukui, 5,780 feet high. An important town on it is Wailuku, of some 3,000 inhabitants.

Third in size of the islands of the group is Oahu, upon which is situated Honolulu. This island is 598 square miles in area. One of the most important sugar plantations on this island is the Ewa plantation, which has a mill and pumping station, renowned for size. Honolulu, of course, is the chief source of interest in Oahu and the Aquarian and Kapiolani Park are the chief tourist attractions. The harbor of Honolulu is not large. The entrance depth is 40 feet and the width 200 feet. The inner harbor gradually shoals up to a very shallow depth. It is 500 feet wide and an extension is being made, widening it to a width of 3,000 feet. The name "Honolulu" means "quiet haven" and fits the city perfectly in every way.

harbor gradually shoals up to a very shallow depth. It is \$00 feet wide and an extension is being made, widening it to a width of 3,000 feet. The name "Honolulu" means "quiet haven" and fits the city perfectly in every way.

Kauai, the fourth island, is the most northerly of the group. It is a steamer trip of one night to Honolulu. The island is 547 square miles in area. Kauai is geologically the oldest of the islands and as a result its mountain has been cut into hundreds of separate peaks and valleys. The west central part of the island is an enormous and almost impassable bog. The island is densely wooded. Rice, sugar and pineapples are cultivated in the lowlands. The soil is extremely fertile and this, together with the copious rainfall, keeps things green all the year round. Hanalei, Lihue and Waimea are the principal towns. Waimea, in the southwestern part of the island, is the place Captain Cook first set foot on Hawaiian territory.

The next island is Molokai, forty miles long and ten miles wide. It is not of much importance and here the leper colony is situated. Everything that is possible is done for the unfortunates, whose exile continues to their death. Molokai is a stamping ground for the hunter of

deer and wild goats.



Lanai, the sixth island in size, has an area of 130 square miles. It is a single cone 3,400 feet in height and is of little or no interest to most persons. The island chiefly

accommodates a few cattle and sheep ranches.

The seventh island, Niihau, is divided by the Kamu-kahi Channel from Kauai. It is a county of Kauai, lying seventeen miles to the west of it and containing 97 square miles. It is owned privately and is largely used for ranching. Few people live on it now, although once it was an important native center. Niihau is of principal interest to the tourist today for the chains made of small white shells picked up on its beaches and for the Niihau mats. It is said that of all the numerous mats made in the Hawaiian Islands none are so soft and fine as those made from the rushes found in the marshes of this unimportant island.

The eighth and smallest island is longest in name, being Kahoolawe, covering an area of only 69 square miles. It is practically barren and is surrounded by cliffs to the north and east. A few fishermen and herdsmen formerly lived on it, but now it is uninhabited save for a few wild goats that have destroyed what litle vegetation it had.

### Rules and Regulations

(Pilotage Fees at Honolulu, Hilo and Kahului)

I. Subject to the navigation laws of the United States, the following fees shall be paid to the Board of Harbor Commissioners by all steamers for the service of pilots at the ports of Honolulu, Hilo and Kahului, for entering and also for departing from such port:

900	tons displacement or under	.\$10.00
1,000	to 1,499 tons	. 15.00
1,500	to 1,999 tons	. 20.00
2,000	to 2,999 tons	. 25.00
3,000	to 3,999 tons	. 30.00
4,000	to 4,999 tons	. 35.00
5,000		
6,000	to 7,999 tons	
8,000	to 9,999 tons	. 47.50
10,000	to 11,999 tons	. 50.00
12,000	to 14,999 tons	. 52.50
	to 17,999 tons	
18,000	to 20,999 tons	. 57.50
21,000	to 23,999 tons	. 60.00
24,000	to 26,999 tons	. 62.50
	to 29,999 tons	
	to 32,999 tons	
	tons displacement or over	
	<del>.</del>	

Provided, that if for the purpose of loading or discharging cargo any steamer enters and departs from two of the above named ports in charge of a pilot on one continuous trip, five per cent shall be deducted from the above schedule of fees:

Provided further, that if for the purpose of loading or discharging cargo, any steamer enters and departs from three of the above-named ports in charge of a pilot during one continuous trip, 15 per cent shall be deducted from the foregoing schedule of fees; and for the purpose of computing said fees, one call at any of the above-named ports and two calls at any one of the other ports shall be considered as calling at three ports.

II. All sailing vessels shall pay fees for pilot services at such ports amounting to 2 cents per gross ton upon the registered tonnage of such vessel, for entering and also for departing from each such port, the minimum charge each way to be twenty-five dollars (\$25).

III. Subject to the restrictions aforesaid, any vessel which shall enter or depart from any of the above-named ports without a pilot shall pay one-half pilotage fees.

IV. All vessels of 3,000 tons displacement, or over, touching at the above-mentioned ports solely for the purpose of securing general supplies shall pay for pilot services a fee of twenty-five dollars (\$25) for entering, and twenty-five dollars (\$25) for departing from such ports.

V. Where not otherwise provided, the fee for pilot services shall be one dollar (\$1) per foot on the vessel's draft for entering port and the same for departing; provided, that the Board reserves the right to rebate all pilot charges to all war vessels.

VI. When any vessel is forced to enter or re-enter any of the above-mentioned ports solely by reason of stress of weather the Board of Harbor Commissioners may require the payment of only such fees for pilot service as shall be just and equitable under the circumstances.

VII. For anchoring any vessel off the above-mentioned ports, the fee shall be twenty dollars (\$20); provided, however, that when any vessel so anchored off any such port is later brought into port under the charge of a pilot, the fee for anchoring off port shall be ten dollars (\$10).

VIII. For detention of pilot on board a vessel more than 24 hours, the fee shall be ten dollars (\$10) per day or fraction thereof. And if, owing to unavoidable circumstances, said pilot has been carried to another port, the vessel, or owner thereof, shall further pay the traveling expenses of said pilot in returning, by first class passage, to his former port.

IX. The displacement of each steamer shall be computed in accordance with the Builder's Displacement Scale, and for this purpose said scale shall be divided into fractional parts of a foot equaling three inches. In case a satisfactory displacement scale is not furnished by the vessel or her authorized agents, her displacement shall be computed by the method known as "Simpson's Rules," using the coefficient of .7: e. g. length times the breadth times draft times. 7 divided by 35. (N. B.—Shorter formula is as follows: length times breadth times draft times 02.)

#### Wharfage

(a) All such watercraft as shall discharge or receive freight, stores, supplies, fuel, oil, ballast, passengers or baggage on or from any wharf, pier, bulkhead, quay or landing belonging to, or controlled by, the Territory, while made fast to, or lying alongside of the same, shall pay to the Board of Harbor Commissioners, as wharfage, the sum of two cents per ton per diem on the net registered tonnage of the vessel, except as otherwise provided in Rule X h.

(b) All watercraft while lying idle and while made fast to, or lying alongside of any wharf, pier, bulkhead, quay or landing belonging to or controlled by the Territory, shall pay to the Board as wharfage, the sum of two (2) cents per ton per diem on the net registered tonnage of the vessel; provided, that all vessels which are engaged exclusively in towing shall pay the sum of one (1) cent per diem, per ton, on the net registered tonnage; provided further, that all watercraft lying idle, outside of other watercraft lying at a wharf and all watercraft undergoing repairs, shall pay the sum of one (1) cent per ton per diem on the net registered tonnage.

No reduction in rates shall be made for any part or parts of idle days during the period of discharging or receiving of freight, stores, supplies, fuel, fuel oil, ballast,

passengers or baggage.

There shall be no charge for Sundays and legal holidays, except for watercraft discharging or receiving freight, stores, supplies, fuel, fuel oil, ballast, passengers or baggage, in which case they shall pay full rates.

A full day's wharfage shall be from midnight to midnight, and a half day's wharfage from midnight to noon, or from noon to midnight, and wharfage charges shall be

made accordingly.

(c) All such watercraft as shall receive or discharge freight, stores, supplies, fuel, oil, molasses, ballast, passengers or baggage—(first) from or upon any wharf, pier, bulkhead, quay or landing belonging to or controlled by the Territory, by means of boats, lighters or otherwise, while lying at anchor, or under steam, in any bay, harbor, or roadstead, whether such boats or lighters are loaded from, or unloaded onto such wharf during, before, or after the time while such watercraft is at anchor or under steam as aforesaid, provided such loading or unloading is of the freight, supplies, stores, fuel, oil, molasses, ballast, passengers or baggage of such watercraft, and as a part of the trip of such watercraft, or (second) while lying in any slip or dock belonging to or controlled by the Territory, but not made fast to, or lying alongside of any wharf, pier, bulkhead, quay or landing—shall pay to the Board of Harbor Commissioners as wharfage, the sum of one (1)

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cent per ton per diem on the net registered tonnage of the vessel, except as otherwise provided for in "d" of Rule X

(d) Any watercraft discharging or receiving freight by means of boats, lighters, rafts or otherwise, that are made fast to, or lying alongside any wharf, pier, quay, bulkhead, or landing, belonging to or controlled by the Territory, while lying at anchor, or under steam, in any bay, harbor or roadstead, or while lying in any slip or dock belonging to or controlled by the Territory, but not made fast to, or lying alongside of any wharf, pier, bulkhead, quay or landing, shall pay to the Board of Harbor Commissioners on the net registered tonnage of the vessel as per the following schedule:

6 hours, or less... .005 0075 18 hours, or more, and less than 24 hours......

Provided, however, if any such watercraft, during a trip, shall use only one wharf, pier, quay, bulkhead or building during a day of twenty-four (24) hours, and for a less period than twelve (12) hours, the charge therefore shall be .005 per ton, and

Provided further, that if any such watercraft, during a trip, shall so use only one wharf, pier, quay, bulkhead or landing, during a day of twenty-four (24) hours, and for a period of twelve (12) hours or more, the charge therefore shall be .01 per ton.

(e) Any wharf, pier, bulkhead, quay or landing belonging to or controlled by the Territory shall be considered as in continuous use, for the purpose of these Rules and Regulations, by any vessel lying at anchor, or under steam, in any harbor or roadstead, from the time of arrival at any such wharf, pier, bulkhead, quay or landing of any boat, lighter or raft from said vessel, and the actual receiving or discharging of freight or passengers on or from said wharf, pier, bulkhead, quay or landing, until the final departure of the last boat or lighter from said wharf, pier, bulkhead, quay or landing for said vessel.

Provided, however, that if any vessel while anchored is compelled by stress of weather to discontinue loading (and) or unloading temporarily, such time of discontinuance shall not be included in the time for which the above wharfage rates are charged, and

Provided further, that, in case any sailing vessel so anchored has completed loading (and) or unloading, and has cleared for another port, and, being otherwise ready to sail, is detained at anchorage awaiting favorable winds or a tow, no charge shall be made for such period of detention.

(f) The Board may, in its discretion, release parties from the obligation of paying wharfage on vessels in the manner required by the Rules provided such parties make written application to be placed on the Credit Wharfage List. Such application shall give the names and classes of vessels of which they are the owners, managers, agents or consignees, and shall agree to pay on presentation, until written notice to the contrary, wharfage bills on all such vessels. In case of failure to pay such bill on presentation, the permission granting release as aforesaid shall be revoked.

### RULE XI. Demurrage

(a) On all wharves at the ports of Honolulu and Hilo freight direct from foreign ports must be removed from the wharf beginning at midnight after a general order has been issued by the Collector of Customs, as follows:

1. Cargoes of less than 2,500 tons, 48 hours.

Cargoes of over 2,500 tons, 72 hours.

3. Provided, the above rules shall not apply to freight for trans-shipment when such trans-shipment is designated in original bills of lading, and on packages; provided further, that freight for trans-shipment must be removed not later than the time of sailing of the first vessel whose destination is the port for which the freight is intended in accordance with the route as per the bill of lading.

(b) All freight other than that direct from foreign

ports must be removed as follows, except as otherwise

provided in paragraph (c):

Cargoes up to and including 2,000 tons delivered to any one wharf within 48 hours after completion of discharge of vessel:

For each additional 1.000 tons or fraction thereof an additional 24 hours will be allowed.

- (c) All outgoing freight shall be entitled to free storage on the wharf beginning three days prior to the commencement of loading of vessel, provided, however, that demurrage will be waived on freight from the United States ports, other than in the Hawaiian Islands, destined for trans-shipment, up to the time of sailing of the first vessel in accordance with the route as per bill of lading and whose destination or port of call is the port for which the freight is intended.
- A demurrage charge of twenty-five (25) cents per (d) A demurrage charge of twenty-nve (23) cents per ton of 2,000 pounds, or 40 cubic feet, will be made per diem, or fractional part thereof, on all freight remaining on any wharf at the ports of Honolulu and Hilo not in accordance with these rules.

(e) No freight subject to demurrage shall be removed from the wharf by the consignee, or any other person, until all charges thereon have been paid and a written release given by the harbor master.

Adopted and approved by Board of Harbor Commissioners, October 26, 1916.

### RULE XIII.

(a) A master or person in charge of any vessel, and the master of any tug having a vessel in tow, shall obey and carry into effect any orders given by the harbor master in relation to the plans and manner of bringing vessels to an anchorage, coming alongside or leaving wharves before securing or mooring vessels.

(b) The master of every vessel shall anchor, moor or place his vessel where the harbor master may direct, and shall not move, nor allow the said vessel to be moved from such place without permission of the harbor master; and shall remove his vessel from any such place when so ordered by the harbor master; provided, that vessels engaged in inland or inter-island traffic may be exempt from this regulation at the discretion of the harbor master.

(c) Preference berthing privileges to vessels making regular calls will be considered upon written application

to the board.

(d) No vessel shall anchor in the fairway of any channel so as to obstruct the approach of any wharf, pier,

bulkhead, quay or landing.

(e) Speed of Vessels: 1. All steamships of over 1,000 tons net registered tonnage, and tow boats with a tow, when entering and leaving the Port of Honolulu, and inside the outer channel buoy, shall proceed (except in case of emergency) at a rate of speed not to exceed five (5)

miles per hour.

2. All steamships of less than 1,000 tons net registered tonnage, when entering and leaving the Port of Honolulu, and inside the No. 10 channel buoy, shall proceed (except in case of emergency) at a rate of speed not to exceed five

(5) miles per hour.

3. All sampans, gasoline launches, steam launches and motor boats, when navigating in the waters of Honolulu harbor, and inside the No. 10 channel buoy, shall proceed not to (except in case of emergency) at a rate of speed not to

(f) Trying of Engines: 1. Any steamship lying at a wharf in Honolulu or Hilo harbor wishing to try her engines must first notify any vessel in the near vicinity that she is going to do so; and the speed of such engines while being tried shall not exceed the speed such engines would make under a slow bell.

2. Any steamship lying at a wharf in Honolulu or Hilo harbor, while trying her engines, must have a responsible person stationed in such a position that he can see any vessel that would be liable to cross the wake of his vessel, and on seeing such vessel his engines must be stopped immediately.

3. Any steamship while lying at a wharf in Honolulu or Hilo harbor will be held responsible for any damage done to the wharf or to other vessels, caused by the vessel trying her engines.

- (g) Sailing Vessels: 1. All sailing vessels, upon entering the Port of Honolulu, will be required, when directed by the harbor master or his assistant, to make a tug boat fast alongside when abreast of the Honolulu harbor lighthouse, and to keep the tug alongside until the vessel is in her berth so that the vessel will, at all times, be under control
- 2. All sailing vessels when entering Honolulu harbor in tow of a tug boat which is not powerful enough to tow alongside, will be required, when directed by the harbor master or his assistant, to have a tug boat astern in addition to the tug boat ahead, when abreast of the Honolulu harbor lighthouse, so that the way of the vessel may be regulated at any time, until the vessel is in her berth.
- (h) The master of every vessel moored or anchored within the harbors of Honolulu, Hilo, Kahului and Port Allen shall have both cables clear and in readiness to slack away when required.
- The master of every vessel and crew thereof, when requested by the harbor master, shall give and afford the harbor master all possible aid and assistance in the performance of any of the duties of the harbor master in relation to such vessel.
- (j) In case any person shall fail to observe any of these rules and regulations, or if by reason of there being no person having authority on board of any ship; or by reason of there not being a sufficient number of persons on board of any ship, there should be any non-compliance with any of these rules; or if the master or crew of any vessel refuse to aid and assist the harbor master in moving, mooring or unmooring such vessel, the harbor master is hereby empowered to moor or unmoor, place or remove such vessel, and for that purpose may direct the casting off (or loosing), of any warp or rope, or unshackling or loosing any chain by which a ship is moored or fastened, and may hire such assistance and tackle, and may purchase and put on board such vessel such quantity of ballast as to him seems requisite, at the cost and charge of the master or owner of such vessel and such cost and charge shall be due and payable to the board before a permit for the departure of such vessel shall be given; and the board shall in no way be liable for any damages or loss occurring to any vessel during, or in consequence

of such mooring, unmooring, or placing of any such vessel.

(k) No person, without the consent or authority of the harbor master, shall cut or cast off any rope or tackle made fast or attached to any vessel, wharf, mooring, buoy or other place where the same has been fastened or at-

tached by the harbor master, or by his order or direction.
(1) No person shall make fast any rope or mooring to any wharf, pier, bulkhead, quay or landing (except to the mooring piles, mooring bitts, or rings, provided for that purpose) or to any shed or piles supporting same, or

to any dolphins or fender piles.

(m) Vessels when being move (m) Vessels when being moved into a slip or alongside must approach "head on," and when at the pier must lie head toward the shore; the studding sail booms and spritsail yards must be rigged in; their off shore anchors suspended, ready for dropping; their lower and top-sail yards braced "sharp up" on their off shore braces, except when in actual use in discharging or unloading cargoes; and their jib booms and martingales must be rigged in.

(N. B. Any of the above requirements may be dispensed with on receiving permission, in writing, from the

harbor master.)

The master of every vessel shall provide the necessary tackle for the proper slinging of all goods discharged from his vessel onto any wharf, or loaded, or intended to be loaded, from any wharf into his vessel and shall pay for any damages that may be done to the wharf, or other property under the control of the board, either from the breakage of the slings, or from the goods being imperfectly slung; or by the landing or shipping of such goods.

(o) The master of every vessel lying alongside of any wharf shall fix, and at all times keep fixed, a safe and proper gangway from such vessel to the wharf.

(p) All vessels lying alongside any wharf shall display, between sunset and sunrise, a light pointing toward the harbor.

- (q) All dirt or rubbish on any wharf or landing, occavessel, shall be thoroughly cleared from the wharf that has been used by such vessel, at the expense of the master or owner thereof. The estimate of the cost of such clearing shall be made by the harbor master or wharfinger, and no permit for the departure of said vessel shall be issued until such sum is paid, or the payment thereof provided
- (r) All vessels are prohibted from pumping bilge, or discharging any waste, oil or fuel oil into the waters of any harbor of the Territory of Hawaii.
- (s) Oil carriers, schooners, owners or users of pipe lines, and all persons are prohibited from discharging oil directly or indirectly into the waters of any harbor of the Territory of Hawaii.
- (t) The master of any vessel berthed at any pier, be-fore beginning to discharge or load such vessel, shall obtain permission in writing from the harbor master or. wharfinger for such discharge or loading; and such discharge or loading shall be continued until completed, by working at such hours as the harbor master or wharfinger may direct; provided, that such direction shall not be in contravention with any law or regulation of the federal or territorial authorities.
- (u) No person shall make any watercraft fast to any steps or landing place for passengers or freight, or allow it to be so near thereto as to obstruct the approach of other watercraft or allow any watercraft to lie longer along such steps or landing place than shall be required for landing or embarking passengers or freight.

#### RULE XIX.

### Charges for the Use of Fuel Oil Pipe Lines

- (a) The charge for the use of the fuel oil pipe line shall be two (2) cents per barrel of oil pumped through the line, whether from ships to tanks or from tanks to ships, or to other users of fuel oil.
- (b) Firms, corporations or individuals using the fuel oil pipe lines must provide the necessary hose to connect the line with the receiving or discharging watercraft.
- (c) Permits to use the pipe line will be granted to those corporations, firms or individuals who are in a position to deliver oil to or from vessels berthed at government wharves at a minimum volume of one thousand (1,000) barrels per hour.
- (d) To regulate delivery of fuel oil to ships berthed at government wharves no barge or oil tank, vessel or other container will be permitted to discharge oil to, or receive oil from any vessel berthed at a government wharf in the harbor of Honolulu or Hilo during such time as the fuel oil pipe line in the respective harbor is in a condition properly to receive from or deliver oil to ships berthed at wharves owned or controlled by the Territory of Hawaii.
- (e) Damage of any nature to wharf or to merchandise stored thereon caused by leaks from hose, or from carelessness in handling oil hose, will be chargeable to the firm, corporation or individual using the fuel oil pipe at the time the damage was done.
- Storage for oil hose on the wharves will be granted on application to the harbor master; any oil hose stored on territorial property will be at the owner's risk, and shall be moved by the owner at any time when ordered by the harbor master.

#### RULE XX.

### Charges for Molasses Pipe Lines

(a) The charge for the use of the molasses pipe line shall be two (2) cents per barrel of 42 gallons pumped through the line, whether from ships to tanks or from tanks to ships, or to other users of molasses.

(b) Firms, corporations or individuals using the line must provide the necessary hose for connection with the

receiving or discharging watercraft.

(c) Permits to use the line will be granted only to those applicants who are in a position to deliver molasses to or from vessels berthed at government wharves at a minimum volume of the normal capacity of the line per

(d) Damages of any nature to wharf or to merchandise stored thereon caused by leaks from hose, or from carelessness in handing molasses hose, will be chargeable to the firm, corporation or individual using the molasses pipe line at the time the damage was done.

### Stevedoring Rates, Hawaiian Islands

Honolulu—McCabe, Hamilton & Renny Co., Ltd., office 20 South Queen St., telephone 2052. A. Macphail, manager, Rates for Honolulu or adjacent Hawaiian ports are:

Discharging: General merchandise, 41c per ton as per manifest; cement, 33½c per ton as per manifest; ballast, 36c per ton as per manifest; bricks and piling, 51c per ton as per manifest; coal, 33½c per ton as per manifest; coke, 61c per ton as per manifest; pig iron, 33½c per ton as per manifest; railroad iron, 61c per ton as per manifest; nitrates and fertilizer, 36c per ton as per manifest.

Loading: General merchandise, 41c per ton as per manifest; sugar, 31c per ton as per manifest; ballast, 36c per ton as per manifest, trimmed; ballast, 26c per ton as

per manifest, untrimmed.

Overtime and Holiday Work: The above rates are based upon ordinary day time work. For all work done holidays, Sundays or at night the vessel must reimburse the stevedore company the extra amount actually paid men for working overtime.

These rates include all weights up to and including two tons. All pieces over two tons at the rate of one dollar (\$1.00) per ton of 2,000 pounds as per manifest.

If crew labor can be employed and master can conveniently give such, the company allows \$2.00 per day for each man thus required.

Labor loaned at the rate of 13 per cent above cost.

Hilo, Island of Hawaii—40c per ton plus cost of lighterage if vessel is unable to berth at Kuhio Wharf. In good weather the wharf can generally be used by lumber schooners and small steamers.

Kahului, Island of Maui-40c a ton on general merchan-

dise, for daylight. Overtime charged in proportion.

Port Allen, Island of Kauai—40c a ton on general merchandise, for daylight work. Overtime work charged in proportion.

### Imports and Exports of Hawaiian Islands (Territory of Hawaii, U. S. A.)

Imports from Orient: Japanese and Chinese merchandise and foodstuffs, including rice, shoyo, sake, miso, nori and other articles of food. Large quantities of tropical weight

Japanese and Chinese clothing and footwear are imported annually for the large Oriental population of the islands.

Interstate Commerce (goods brought to Hawaii from the United States and not classed as imports): Flour, dried meats and fish, bacon, ham, tropical weight clothing (no demand for heavy clothing of any kind), shoes, lumber, automobiles, steel and iron, agricultural implements, feed, hay, barley, fertilizer, cement, coke, brick, motor trucks, bath tubs, tractors, beer and wine, coal, box shooks, sugar mill machinery, electrical machinery and equipment, lighting fixtures, irrigating pumps, sewer pipe, paving materials.

Exports: Sugar, canned and fresh pineapples, rice, green coffee, awa root, bananas.

### Importers and Exporters Territory of Hawaii

Honolulu: H. Hackfeld & Co., Ltd.; Theo. H. Davies & Co., Ltd.; Alexander & Baldwin, Ltd.; Castle & Cooke, Ltd.; C. Brewer & Co., Ltd.; Y. Takakuwa, H. Hamano, K. Isoshima, M. Sayegusa Shoten (D. Yonekura, prop.); M. Kawahara

Hilo: S. Hata, Hilo Mercantile Co., Kwong See Wo.

Kahului: Japanese Mercantile Co.

Port Allen: None.

N. B.—Importing and exporting at all smaller ports in the Hawaiian Islands is done through Honolulu wholesale houses, American, English and Japanese, nearly all of whom have agencies at Hilo, on the Island of Hawaii; Kahului, Wailuku and Lahaina, Island of Maui; Port Allen, Maimea, and Lihue, Island of Kauai. The various island plantations always order merchandise through their

agents in Honolulu-Hackfeld, Brewer, Castle & Cooke, Alexander & Baldwin, and Davies.

### Customs District of Hawaii Ports of Entry (Officials)

Honolulu, Island of Oahu: Collector of Customs, Malcolm A. Franklin; Special Deputy Collector, Raymer Sharp.

Hilo, Island of Hawaii (east coast): Deputy Collector

Manukona, Island of Hawaii (west coast): Deputy
Collector in Charge, Edward Madden.
Kahului, Island of Maui: Deputy Collector in Charge,

David C. Lindsav.

Koloa (Port Allen, Island of Kauai: Deputy Collector in Charge, George B. Leavitt.

### Consular Corps at Honolulu

Austria-Hungary: Senor Luis Guillen Gil, Spanish Consul, is acting consul. Has served since U. S. declaration of war on Germany. Office room 4 Kapioani Bldg., Alakea and King Sts. Residence The Romagoy, 1429 Makiki; telephone 3675.

Belgium: Dr. Augustus Marques, vice-consul, 1928

Wilder Ave.; telephone 4487.

Brazil: A. D. Castro, Makiki Heights; telephone 3109

Chile: J. W. Waldron, office 55 Merchant St.; telephone 1551.

China: Taz-ang Woohuan, 905 Sheridan St.: telephone 1952.

Denmark: C. J. Hedemann, 601 Judd St.; telephone 2843. Office at Honlulu Iron Works.

France: Dr. Augustus Marques, 1928 Wilder Ave.:

telephone 4487.

Germany: Senor Luis Guillen Gil, Spanish consul. has acted as German consul since U. S. declaration of war on Germany. Office room 4 Kapiolani Bldg., Alakea and King Sts.; has no telephone. Residence The Romagoy, 1429 Makiki; telephone 3675.

Great Britain: E. L. S. Gordon, consulate at 932
South Beretania; telephone 1385. Residence same.

Italy: E. L. S. Gordon, acting consul. Address

above.

Japan: Rokuro Moroi, consul-general, consulate at Kuakini and Nuuanu Sts.; telephone 2243. Residence phone

1183. T. Imai, vice-consul.

Mexico: W. Lanz, office 55 Merchant St.; telephone
1551. Residence Punahou St., north of Beretania; telephone 4114.

Netherlands, The: H. M. von Holt, office 97 Merchant St.; telephone 1103. Residence 422 N. Judd St.; telephone 1040.

Norway: L. M. Vetlesen, office Adams Lane, with Mutual Telephone Co.; telephone 3411. Residence 1020 Piikoi St.; telephone 2275.

Panama: Dr. Augustus Marques, 1928 Wilder Ave.:

telephone 4487.

Peru: Bruce Cartwright, Jr., office 35 Merchant St.; telephone 2428. Residence 665 Wyllie St.; telephone 1649.

Portugal: Angelo da Cunha Pessoa, consul-general: consulate at 787 S. King St.; telephone 4024. Residence same.

Russia: Dr. Augustus Marques, vice-consul. See Belgium.

Spain: Senor Luis Guillen Gil, office Kapiolani Bldg., Alakea St., corner King. No office telephone. Residence The Romagoy, 1429 Makiki; telephone 3675. T. F. Sedgwick, vice-consul, 1311 Centre Ave., Kaimuki; telephone

Sweden: George Rodiek, with H. Hackfeld Co., Ltd., Fort St. at Merchant; telephone 1241. Residence 2616 Nuuanu Ave.; telephone 2024.

### Consuls on Island of Hawaii

Panama: R. T. Guard, Hilo.

Portugal: J. A. M. Osorio, vice-consul, Hilo.

Consuls on Island of Maui

Portugal: Enos Vincent, vice-consul. Wailuku.

### Board of Harbor Commissioners

(Territory of Hawaii)

Chairman, Charles R. Forbes.

Secretary, Norman Watkins.
Clerk, Frank Poor. Office Capitol Bldg., King St. Phone 1211.

Commissioners: James Wakefield, W. H. McClellan, C.

J. McCarthy, Norman Watkins.

Harbor Master, Port of Honolulu, Captain William R. Foster. Assistant Harbor Master, Captain W. H. Curtis. Office at Pier 7, Phone 1334.

Harbor Master and Pilot, Kahului, Maui, Captain E. H.

Parker

Harbor Master and Pilot, Hilo, Hawaii, Captain Ferdinand Mosher.

Harbor Master and Pilot, Port Allen, Kauai, Captain George B. Leavitt.

### Pilots at Honolulu

Captain J. R. Macauley, Captain J. F. Haglund, Captain M. A. Madsen.

Importers

Alexander—Baldwin, Theo. H. Davies & Co., Ltd.; H. Hackfeld & Co., Ltd.; East Indian Store, Hoffschlaeger Co., Ltd.; L. A. Kerr, L. B. Kerr & Co., Ltd.; S. Koyama; Langer & Co.; Mrs. J. P. Melim; Maurakami & Kimura; I. Rubenstein & Co.; von Hamm-Young Company, Ltd.; K. Yamamoto; Yee Wo Chan Co.; Yuen Chong; Y. Takakuwa.

### U. S. Bonded General Storage Warehouses

None; custom house warehouse buildings serve purpose.

U. S. Bonded Draymen

Honolul Construction & Draving Co., 65 Queen St., telephone 4981.

Customs Brokers

De Freest, S. & Co., main office 39 Merchant St., telephone 2412; custom house branch office, telephone 1347.

Peterson, David L., main office Campbell Block, Mertelephone 1156; custom house branch office, chant St., tele telephone 2355.

### **AUSTRALIAN STATES AND NEW ZEALAND**

Victoria New South Wales Queensland

South Australia Western Australia Tasmania

#### Commonwealth of New Zealand

Steamer Routes: Coasting service to and from Australian ports is a most frequent one and is served by many lines. The Howard Smith Co., Adelaide S. S. Co., and Union S. S. Co., of New Zealand, are among the most important. Local agents are at all seaports, where full information can be gained.

From Sydney as a center, direct services are maintained, in addition to coastal ports, with New Zealand at regular and frequent intervals. From Sydney, passages can be frequently booked by such lines as the P. & O. S. N. Co. and British India Steam Navigation Co., to most ports of

the world.

Immediate connections with Oriental ports are maintained by Burns-Philp S. S. Co., to Singapore, British India Steam Navigation Co. and the P. & O. Steam Navigation Co., to India, Eastern & Australia Steam Navigation Co., to Oriental ports via Manila; Nippon Yusen Kaisha on the same route and the North German Lloyd, which latter service is now suspended. Connections are made by Messrs. Burns-Philp Co., at Singapore with Dutch Mail S. S. Co., plying to and from Batavia and other Java ports. Messrs. Alfred Holt & Co. (Blue Funnel Line), also maintains coast services from Singapore to Batavian ports.

#### Mail S. S. Lines to New Zealand

To Auckland from Vancouver: Canadian Australasian line; days in transit, 22

To Auckland from Tahiti: Union S. S. Co. of New Zealand.

To Auckland from Fiji Islands: Union S. S. Co. of New Zealand.

To Auckland from Tongan Islands: Union S. S. Co. of New Zealand.

To Auckland from Samoan Islands: Union S. S. Co. of New Zealand.

To Auckland from Sydney: Union S. S. Co. of New Zealand; days in transit, 4.

To Bluff from Melbourne: Union S. S. Co. of New Zealand; days in transit, 5.

To Bluff from Hobart: Union S. S. Co. of New Zea-

To Wellington from San Francisco: Union S. S. Co. of New Zealand; days in transit, 21.

To Wellington from Cook Islands: Union S. S. Co. of New Zealand; days in transit, 7.

To Wellington from Tahiti: Union S. S. Co. of New

Zealand; days in transit, 9.

To Wellington from Sydney: Union S. S. Co. of New

Zealand; days in transit 4.

From Wellington to Melbourne: Union S. S. Co. of

New Zealand: days in transit, 5

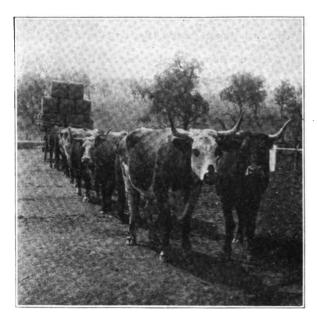
Imports into Australia showed a decrease from a total of £75,463,037 (\$367,240,869) for the fiscal year of 1916-17 to £60,428,813 (\$294,076,818) for the fiscal year 1917-18. Some of the principal items with their value, in pounds sterling, were as follows.

Articles—	1916-17	1917-18
Apparel	£20,559,510	£18,681,158
Boots and shoes	449,14/	238,766
Cement	27,032	2,201
Cordage and twine	973,564	938,813
Drugs and chemicals	1,596,916	1,637,31 <b>5</b>
Earthenware and china	378,227	297,733
Fish	844,609	853,925
Furniture	59,976	30,464
Glass and glassware	601,313	438,737
Rice	231,002	387,832
Hats and caps	319,090	255,361
Agricultural implements and ma-	,	,
chinery	615,475	512,937
Rubber goods	1,083,925	1,103,480
Iron and steel	1,629,233	658,346
Galvanized iron	720,395	591,718
Pig iron	94,360	19,339
Jute goods	2,778,718	3,128,715
Leather	593,666	348,151
Machines and machinery	3,249,625	2,325,817
Manures	585,300	478,068
Metal manufactures	3,176,959	2,361,493
Milk, preserved	49,758	10.786
Kerosene	608,427	443,167
Paints and colors	683,640	482,119
Paper, printing	1,737,235	1,062,010
Paper, all other	1,463,662	914,527
Brandy	204,667	85,565
Gin (including schnapps)	138,432	64,286
Whisky	1,208,877	1,039,605
Sugar, cane	1,615,241	278,985
Tea	1,747,147	1,551,359
Timber	1,498,236	1,412,684
Tin plates	1,329,275	785,224
Tobacco, manufactured	131,659	93,362
Tobacco, unmanufactured	868,255	326,781
Cigars	89,152	83,345
Cigarettes	58,542	43,829
Tools of trade	518,882	375,851
Wine, sparkling	39.089	20,493
Wine, other	26,410	20,723
**************************************	20,110	. 20,720

The principal articles exported from the Commonwealth are: Wool, wheat, meat, flour, leather, hides, skins, tallow, gold, silver, concentrates, lead, copper, molybdenite and other ores, tin, wolfram, coal, coke, glue pieces, potatoes, biscuits, butter, cheese, jams, jellies, wines, dried fruit, horses.

There is an increased demand in Australia for American products, from automobiles to seeds, and the list of articles needed by the Commonwealth and for which there

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-Pulling a Load of Baled Wool An Ox-Team-IO Big Steers Copyrighted by Underwood & Underwood

will be a steady demand for several years to come, are as follows: General wearing apparel (including hats, shoes, drapery, hosiery, etc.); iron, steel, hardware, tools, nails, wire fencing, machinery of all kinds, particularly ma-

chinery to facilitate the handling of freight and loose cargoes. Spirits, tobacco, paper, paper boxes, stationery, lithograph machinery; automobiles and automobile accessions. sories; drugs, chemicals, fancy goods and toys. Novelties and notions, canned fruit and fish, coffee and many lines of groceries, candy, sweets in general, including the ingredients necessary in the manufacture of candy; gasoline, carbide, lubricating oils, modern farming implements, tractors, trucks and trailers, hardwoods and other lumber, electric fixtures and fittings, cooking and heating appliances. all kinds of sanitary appliances, seeds.

Practically all of the war-time restrictions have been removed, and Australia again offers a free market for all classes of merchandise.

Population: (1918) 4,980,565.

United States Consulates at Auckland, Christchurch, Dunedin and Wellington, New Zealand; Melbourne, Adelaide, Fremantle, Newcastle, Brisbane, Townsville, Sydney.

#### Distances

. Distallets	
From Nautical	Miles
Brisbane to Thursday Island	1,430
Brisbane to Townsville	780
Fremantle to Adelaide	1,353
Fremantle to Melbourne	1,852
Fremantle to Sydney	2,428
Melbourne to Hobart	443
Melbourne to Sidney	576
Sidney to Hobart	
Sidney to Thursday Island	
733	-,

The vast island or continent of Australia has an area of 3.000.000 square miles, and is accordingly almost equal in extent to the United States of North America, exclusive

#### FORM OF DECLARATION FOR COMMONWEALTH OF AUSTRALIA

Department of Trade and Customs Melbourne, 10th July, 1917

The following is the approved form of Declaration to be printed or stamped on invoices for goods exported to Australia and duly signed and completed by a principal officer of the manufacturer or supplier. STEPHEN MILLS

Comptroller-General on this invoice, amounting to......have the means of knowing and do hereby declare-

1. That the said invoice is in all respects correct and true.

2. That the said invoice contains a true and full statement showing the price actually paid or to be paid for the said goods, the actual quantity thereof, and all charges thereon.

3. That the said invoice also exhibits in a separate column the actual price at the date of this declaration

of equal quantities of identically similar goods to any purchaser for home consumption in this country.

4. That no different invoice of the goods mentioned in said invoice has been or will be furnished to any

one; and
5. That no arrangement or understanding affecting the purchase price of the said goods has been or will be made or entered into between the said exporter and purchaser or by any one on behalf of either of them, either by way of discount, rebate, salary, compensation, or in any manner whatsoever other than as shown in said invoice.

Signature..... Witness....

Domestic value

F. O. B. (a)...... at date of shipment to Australia. Subject discount for cash. (b) Including cost Ex

of outside casing.
(a) Insert "Port of Export" or "Factory" as the case may be.

(b) Delete inappropriate prefix.



of the territory of Alaska. A good deal more than onethird of it lies within the torrid zone, but the great bulk of its population belongs to the region outside of that belt. Most of the inhabitants, moreover, are found within two or three hundred miles of the coast, and from the nature of the climate this can never be otherwise.

The coast line of this vast island is remarkable for its long stretches of uniform character, without inlets that can be made use of by shipping even for shelter. The principal exceptions to this character are on the eastern side and in some parts of the northwest.

To the north of Harvey Bay, on the east coast, numerous coral reefs rise to the surface of the water, making the seas somewhat dangerous to shipping, and about one degree north of the Tropic of Capricorn there begins a series of coral reefs such as are to be seen nowhere else in the world over the same extent of sea. These form together what is known as the Great Barrier Reef, which extends for a distance of about 1,200 miles, advancing into the latitude of Torres Strait, which it nearly closes. Its widest part is in the south, where it extends for about 100 miles from east to west, and in that part also it lies furthest from the coast. As it narrows towards the north it comes nearer to the coast, being in many places within 10 miles of the land, opposite the promontories, and generally not more than 15 or 20 miles distant. At low tide the surface of the reef is just about the level of the surface of the water, and at all states of the tide, the border of the reef can be distinguished by the strong breakers that wash over it. The reef, however, is not continuous. It is broken up by many deep channels, some of which are narrow, others from 10 to 12 miles wide. To seamen these channels are of great importance, since they allow of a choice of routes between the seaports in the east of Australia and Torres Strait. The route within the Barrier Reef along the Australian coast has the advantage of a calm and beautiful sea owing to the protection which the reef affords, and is that preferred by steamers, whose course can be more easily controlled than that of sailing vessels. But this route is one that requires careful navigation, and above all at night, when the reef cannot be made out at a greater distance than half a mile. By day it is visible at a distance of four miles from the bridge and seven miles from the rigging. Hence, sailing vessels that take the inner route proceed on their course only by day, anchoring for safety at night. For the most part such vessels go outside of the reef altogether into the open ocean, and pass through one of its northern channels into or out of Torres Strait.

Even to the west of the Barrier Reef the navigation of Torres Strait has been made difficult by the coral builders. The hundred miles of sea between Cape York and the south coast of New Guinea, besides being studded with numerous small islands, are crowded with coral reefs and sandbanks, which leave only one or two safe channels for shipping between them. The channel most used is that which lies immediately north of the Prince of Wales Group of islands, on one of which, named Thursday Island, there is a much frequented calling station for shipping.

Off the southern part of the east coast of Australia there is at all seasons a strong current setting southwards. It forms a broad belt at the distance of from 20 to 60 miles from the land, on which account vessels going northwards (from Bass Strait to Sydney) keep more than 60 miles from shore to avoid the current, and those going southwards keep within the current to take advantage of it.

#### Wireless

The following is a list of wireless stations at present in Australia connected under the system known as "Balsillie," viz: Sydney (Pennant Hills), N. S. W.; Brisbane, Queensland; Rockhampton, Queensland; Adelaide, South Australia; Perth, Western Australia; Melbourne, Victoria; Hobart, Tasmania; Thursday Island, Queensland; Port Moresby, (British New Guinea).



Rabbits for Export to the United States and England

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#### Commonwealth Railroads

All of the steam railroads, with the exception of a very small number of branch lines, are owned and controlled by the government. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines roughly running parallel to the coast. In the east, lines radiating from Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distance ranging up to over 600 miles; in the southeast there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are four main lines, with numerous branches, running from Melbourne, while from Adelaide one mail line, with several branches to the coastal towns runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports, meeting the main line from Melbourne on the border of South Australia and Victoria. The main interstate lines which permit a direct communication between the four capital cities—Brisbane, Sydney, Melbourne, and Adelaide—covers a distance from end to end of 1,781 miles. This journey occupies three days, two hours and thirty minutes.

## Distances Between Capitals

	Distance	
Brisbane to Sydney		7153/4
Sydney to Melbourne	. <b>. </b>	.5821/2
Melbourne to Adelaide		48234
Brisbane to Adelaide	1	,781

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach, in Queensland to Oonadatta, in South Australia, a total distance of 3,294 miles. In Western Australia there is a connected system of main and trunk lines between the ports of the state and the agricultural, pastoral and mining districts.

In the northern part of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

## **VICTORIA**

#### Ports: Melbourne, Port Phillip, Warrambool.

The value of imports into the State of Victoria increased from approximately \$63,926,960 for the first eight months in 1917, to about \$81,726,335 for the same period in 1918. The principal increases were in apparel and soft goods, drugs and chemicals, jute goods, oils, paper, rubber goods, and cordage and twines.

#### Imports (Eight Months)-January-August

	1917	· 1918
	£	£
Apparel and soft goods	3,601,404	.*6,071,769
Boots and shoes	64.872	33,242
Cordage and twines	182.744	217,208
Drugs and chemicals	214,294	346,464
Fruits (fresh and dried)	43,356	59,569
Hats and caps	63,504	73,168
Implements and machinery	708,009	598,005
Iron and steel, cwt	401,346	355,606
Jute goods—bags, sacks, etc	359,660	619,099
Metals—manufactures of		551,639
Oils in bulk	. 392,692	622,354
Paints and colors, varnishes	104,415	120,329
Paper	433,342	600,781
Rubber goods	285,921	455,138
Spirits	130,367	174,183
Tea, 1b	429,090	373,501
Timber	196,896	346 <i>,22</i> 0
Tobacco, unmanufactured, lb	266,370	105,110
Vehicles	311,298	299,996
Totals all imports1	2,785,392	16,345,267

\*Including woolen goods as follows:—Apparel, £327,-124; socks (woolen), £98,504; blankets, £1015; flannels, £2010; woolen piece goods, £615,426; and other, £71,-207.

Returns for the yield of wheat in Victoria for 1917—18 shows a decline of 26.4 per cent, and the area dropped about 14 per cent. Although less than the two preceding seasons the yield is substantially higher than those for a number of years previously. The following table shows the official yield, etc., in comparison with the five preceding seasons as computed by the Government Statistician of the state:

		Area	Yield	Average
	•	Acres	Bushels	Bushels
1912-13		2,085,216	26,223,104	12.58
1913-14		2,565,861	32,936,245	12.84
1914-15			3,940,947	1.38
1915-16		3,679,971	58,521,706	15.90
1916-17		3,125,692	51,162,438	16.37
1917-18		2,690,216	37,737,552	14.03

The yield of oats for the 1917-18 season was 6,141,-287 bushels from 293,214 acres, or an average of 20.94 bushels to the acre.

The production of gold for the first seven months of 1918 amounted to 89,916 fine ounces, showing a decrease of 25,989 ounces as compared to the corresponding period for 1917.

Last year's annual Royal Agricultural Show at Melbourne produced many interesting facts concerning the sheep-raising industry in the state as compared to the rest of Australia. Of the 76,668,000 sheep in Australia, Victoria possesses 14,760,000, while the relative totals in bales of wool are 1,909,000 and 400,000. The value of the Australian wool yield for 1917—18 was about \$214,500,000, Victoria's share being \$45,000,000. Woo! was featured among the exhibits at the 1918 show, and at the next show, to be held in the spring of this year (August or September) cereals will occupy the place of the chief exhibit. Fruit is being reserved for 1920.

Victoria is the smallest of the states on the mainland of Australia, having an area of 87,884 square miles. The population of the state is 1,416,982. It occupies the extreme southeast, and is separated from the State of New South Wales mainly by the Murray River. The first permanent settlement on its territory was made towards the close of 1834. Till 1851 it was a dependency of New South Wales. A large part of the surface is mountainous. The Australian Alps, with their spurs, fill the greater part of the eastern half of the state. West of these mountains the dividing range sinks in elevation, so that easy routes could be found for the railways laid north of Melbourne to the plains cn the other side. The plains to the south of the Dividing Range, lying as they do on the moister side of the mountains, are well watered, in many places thickly covered with trees, and clothed with rich grasses, more suited for horses and cattle than sheep. This is especially the character of Gippsland, the region to the south of the Australian Alps. In the north there is greater dearth of rain; nevertheless, it is in this part of the state that the area under crops has been most rapidly increasing of late years, since the decline of the gold fields has caused so many people formerly engaged in mining to take to farming. In some years the rainfall even here is sufficient to allow of abundant crops being grown, but when the rains fail great loss follows to the cultivators. Hence, if farming is to be carried on regularly with success in this region, it can only be by irrigation.

#### Reclaim Plains for Wheat Crops

In the northwest is the district called Wimmera, at present mainly a waterless desert, but containing a tract with an excellent soil bordering the Murray, on which large irrigation works have been carried out at Mildura, and are now managed by a government trust. The area embraced by these works is 250,000 acres. Among the objects of cultivation are grapes, including the raisin and currant grapes, oranges, figs, apricots and peaches, plums, including plums for prunes; besides sorghums, tobacco, fibre plants and other crops. Further south the plains are now being reclaimed for wheat cultivation by clearing them of what is known as the mallee scrub, that is, thickets of the Eucalyptus dumosa, brittle stemmed trees growing to the height of from 12 to 20 feet; but the yield of the crops, like the rainfall, is scanty and very precarious. Sugar beet is becoming an important object of cultivation around Maffra in Gippsland. Coal is being mined in rapidly increasing quantity on the east side of Western Port.

#### Melbourne Chief Seaport

The capital and chief seaport is Melbourne, situated on the Yarra, a short distance above its mouth in Port Phillip Bay. The Yarra is navigable up to the city by vessels of considerable size, including all those engaged solely in the intercolonial trade; but the harbor of Melbourne for the largest ocean steamers is formed by Hobson's Bay, the upper part of Port Phillip. On this bay stand Port Melbourne (formerly Sandridge) and Williamstown. Port Phillip itself is a shallow sheet of water, which affords a large extent of safe anchorage, but has a very narrow and difficult entrance. On a western arm of this bay stands the port of Geelong, a town that has long carried on the manufacture of coarse woollen tweeds, etc., which are exported to all the Australian states. In the interior, northwest of Melbourne, is Ballarat, the center of the richest alluvial goldfield ever opened up, but which is now to a large extent exhausted, gold being now mainly obtained not by digging, but by the crushing of quartz rock. In a more northerly direction from Melbourne lies Bendigo (Sandhurst), the chief center of quartz crushing; on the Murray, Wodonga, opposite the New South Wales town of Albury, at the head of the ordinary navigation. where the river is crossed by the railway to Sydney, lower down Echuca, at the place where the river makes a sharp bend to the northwest, and where another railway now crosses into New South Wales.

#### **NEW SOUTH WALES**

Ports: Newcastle, Port Jackson (Sydney), Port Stephens.

Imports and exports for the year ending June 30. 1918, were as follows:

Imports ..... £27,989,455

decline as compared to that of the 1915-16 season, but on the other hand New South Wales takes its place as one of the two states in which a gain was made over last year. Statistics for the past three seasons are given below in bushels:

1915-16 1916-17 66,764,910 36,598,000

66,764,910 36,598,000 37,843,930

New South Wales was named by Capt. Cook, who was reminded of the Wales of Great Britain by the appearance of the mountains which he saw from off the coast. It was in this state that the first settlement was founded in Australia, namely, on the magnifi-cent natural harbor of Port Jackson, the harbor of Sydney, which has few rivals in the world for either beauty or convenience. Throughout this state the Dividing Range forms a more continuous barrier between the coast lowlands and the interior plains and table-lands than it does in Victoria, and it was long before the settlers found a way across the Blue Mountains, as the part of the dividing range behind Sydney is called. The route at last found in this quarter is now traversed by a railway, which runs for 60 miles through the mountains in numerous zigzags, and finally pierces the mountains in numerous zigzags, and finally pierces them in a tunnel 3,700 feet above sea level. Farther north the New England Range, trending north and south, and the Liverpool Range, trending east and west, shut cff the part of the tableland known as the Liverpool Plains, which contains the head waters of the Naomi, or Peel River, one of the tributaries of the Darling. The interior of New South Wales generally is traversed by the chief tributaries of the Murray, and the trealess plains noted for their wool lying to the and the treeless plains noted for their wool lying to the north of that river are hence known as the Riverina. The population of New South Wales (Dec. 31, 1917, 1,886,501) of late years has increased at a much more rapid rate than has that of Victoria, which it now exceeds. It is, however, much more widely distributed over the surface, so that there is no part of New South Wales where the railways are so thickly crowded together as they are in part of Victoria. The reason for this is that the mineral treasures of the state are more widely distributed than in the sister state; and the population engaged in agriculture is similarly scattered, partly because it is the interest of corn growers to be near those who will buy their corn, and partly because the lands best suited for agriculture in New South Wales are dotted at wide intervals over the state. Most of the coast strip is rather sterile, except here and there in the valstrip is rather sterile, except here and there in the valley bottoms. On the tableland within the Dividing Range there is a greater extent of good soil, but the rainfall ceases to be sufficient for agriculture within a distance of 150 or 200 miles from the coast. The area of the state is 310,367 square miles.

Lord Howe's Island and Norfolk Island, lying to the northeast of Sydney (the latter nearer the northwest point of New Zealand) are dependencies of New South Wales. They both contain a small number of

South Wales. They both contain a small number of

The capital of the state and chief seaport is Sydney, The capital of the state and chief seaport is Sydney, on Port Jackson. At the head of the so-called Parramatta River, which is in reality a prolongation of the inlet of Port Jackson, stands Parramatta, in a district noted for its oranges. North of Sydney, on the estuary of the Hunter River, stands Newcastle, the chief coal mining town and place of export of coal. The coal is now exported not only to all the other Australasian states, but also to India China, Scuth America, and even San Erancisco. Another important coal port is even San Francisco. Another important coal port is Wollongong, to the south of Sydney, the port of the Illawarra coal field. Bathurst, on the tableland behind Sydney, is the center of the chief wheat growing district of the state; Deniliquin, that of the pastures of the Riverina, and the starting place of the railway by which the wool of the District is despatched for export to Melbourne; Broken Hill and Silverton, near the western frontier, the chief towns of the Barrier Range, a silver-yielding area said to be 10,000 square miles in extent; Cobar, in the heart of the state, the chief copper mining, and Vegetable Creek, near the northern frontier, the chief tin-mining town. The water supply of the silver mining district was at first a difficulty, but is now obtained from local rivers. Most of the ore is conveyed to Port Pirie in South Australia, and there smelted.

#### Wharfage and Tonnage Rates

Tonnage Dues: Tonnage dues at all public wharves

at any port in the colony of New South Wales:
One farthing per ton on every vessel fully laden discharging the whole of her inward cargo at any public wharf or private sufferance wharf for every day or part of a day that such vessel occupies a berth at any such wharf and a rate of 1 half-penny per ton on every such vessel discharging the whole or a portion of her inward cargo at any such wharf for every day or part of a day that any such vessel occupies a berth at any such wharf.

Harbor and Light Dues: Four pence per ton for a half year, which shall not be charged at any other half year, which shall not be charged at any other port for the period of six months, payable on or before June 30th or December 31st. The following are exempt—vessels that put in by distress of weather, or to repair damages, or engaged in the whaling trade. Pilotage Rates: There shall be payable:

(a) Upon every ship on her arrival or departure in ballast, the sum of 1 penny per ton.

(b) Upon every ship on her arrival for the purpose of refitting or decking the ship and for the other arrival for the sum.

of refitting or docking the ship, and for no other purpose, the sum of 1 penny per ton; and on her departure after such refitting or docking, the sum of 2 pence per

(c) Upon every ship compelled to enter port or place through stress of weather, or for repairs, or to receive orders, or to take in provisions, or being in distress, on entering any port or place for the purpose of obtaining coal to be used in the ship on her voyage, and for no other purpose, the sum of 1 penny per ton on her arrival or departure.

(d) Upon every ship on her arrival or departure under circumstances other than those hereinbefore in this section set forth, the sum of 2 pence per ton.

Provided always, that no vessel arriving at or departing from any port or place within the jurisdiction under the provisions of sub-sections (b) and (c) of this section shall be required to pay the harbor and light rate imposed under section 55 of the principal act.

## **QUEENSLAND**

Ports: Brisbane, Bundaberg, Cairns, Gladstone, Port Rockhampton, Townsville.

Population: (March 31, 1918, estimated), 692,476.

Propulation: (March 31, 1918, estimated), 692,476. Queensland's overseas commerce during the year ending June 30, 1918, reached a grand total of £15,442,980, divided as follows: imports, £4,489,213; exports, 10,953,767. The 1917-18 wheat yield was a little over a million bushels, which was less than the year previous, but almost 600,000 bushels above that of the 1915-16 season. The totals for the past three seasons beginning with 1915-16 were 414,438 bu. 2,463,141 bu. and 1,405,664 bu., respectively.

Cotton raising is being encouraged by the Commonwealth Board of Trade, and a commission has been appointed to conduct an investigation into the pos-

appointed to conduct an investigation into the possibilities of the industry. Considerable success has been met with by the Queensland planters, and in May, 1918, the Department of Agriculture accepted 46,977 pounds. During the corresponding month of the year previous the yield was less than 11,163 pounds.

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Queensland, the state to the north of New South Wales, once, like Victoria, is a dependency of New South Wales, from which it was separated in 1859. It includes all the islands in the narrowest part of Torres Strait. The surface consists mainly of tableland above 1,000 feet in height, and the district in the southeast known as the Darling Downs, on which are the finest pasture grasses in the state, is about 2,000 feet high, and thus has a comparatively cool climate for its situation, within five degrees of the Tropic of Capricorn. Extending far into the torrid zone, Queensland has more varied products than the more southern states. Among the tropical and sub-tropical products are cotton, arrowroot, ginger, coffee, fruits, but at present chiefly sugar cane, which is largely grown in the low river valleys on the coast. Gold is found at many places, but most abundantly round Charters Narrows, near the Burdekin River, about the middle distance of the state, and round Gympie, in the Wide Bay district, not far from the coast in the southeast. Tin is found in two widely separate districts. One of these is on the tableland in the extreme south of the state, in a district adjoining the New South Wales tin field, the center of this district being Stanthorpe. The other, which is the more productive of the two, is around Herberton near the east coast, in about 17½ degrees South latitude. A very rich copper district lies around Cloncurry, in the west of the state, to the south of the Gulf of Carpentaria, and in January, 1908, this was connected by rail with Townsville. Besides metals, Queensland is very rich in coal, but it has not, like New South Wales, a coalfield accessible to oceangoing vessels. The chief collieries are in the basin of the Brisbane and Bremer rivers, and next in importance are those from 15 to 20 miles north of Marvborough in about 25 degrees South.

The capital of the state is Brisbane, 500 miles north of Sydney, situated on both sides of the Brisbane river, at the head of navigation for large sea-going vessels. Toowoomba, on the tableland to the west of Brisbane, is the chief town on the Darling Downs. Rockhampton, close to the Tropic of Capricorn, at the head of navigation on the Fitzroy river, is the second town in population in the colony, the outlet for a rich and extensive pastoral district as well as for districts producing gold and copper. Townsville is the outlet for several large gold fields, including that of Charters Towers, and also for a large area of pastoral country, so that it has become an important seaport though it has only open anchorage. Brisbane, Rockhampton and Townsville are the starting points of three lines of railway which are being laid for a distance of from 300 to 500 miles into the better parts of the tableland. The fine harbor of Bowen, naturally the best on the coast, still lacks for its development direct railway communication with the interior.

## **SOUTH AUSTRALIA**

Ports: Port Adelaide, Port Darwin, Port Pirie, Wallaroo.

Area: 380,070 square miles.

Population: (June 30, 1918), 439,275.

The chief manufacturing industries are those turning out woolens and leather goods and there are about 1,300 factories of different kinds scattered throughout the state.

Nearly 5,000,000 acres of land are under cultivation, the principal products being wheat, oats, barley, hay, potatoes and grapes. There are also many orchards which produce large quantities of fresh and dried fruit for exportation. Pastoral land under lease comprises about 151,459 acres, with 283,641 horses, 352,905 head of cattle, 66,119 pigs, and 5,073,000 sheep.

For the year ending June 30 1918, imports amounted to £4,217,893, and exports were valued at £4,689,079. The wheat yield for the 1917-18 season fell considerably below the previous season, with 45,745,064 bushels harvested for 1916-17, and 28,692,594 bushels last year.

South Australia is now joined to Western Australia by the Transcontinental Railway extending from Port Augusta to Kalgoorlie, a distance of over 100 miles, and connecting with the main lines in both states. The Commonwealth banks in South Australia in 1917 showed deposits exceeding \$60,000,000.

South Australia does not answer to its name, but extends from south far to the northwest of the three states already treated of. It was founded in 1834 by an act of the British Parliament, and at the time of its foundation, was expected ultimately to include the territory belonging to Victoria. Most of the inhabitants of the state are confined to a district smaller than England, which is the only part in temperate latitudes that receives even a fair supply of rain, chiefly in winter. This district lies mainly to the east and north of Spencer Gulf and the Gulf of St. Vincent, where it is traversed by the Mount Lofty Range and the Flinders Range of Mountains. Among agricultural products wheat is the most important. Wine and olives are also included. From an early date copper has been its chief mineral, but a goldfield, said to be rich, has been discovered about 200 miles northeast of Adelaide.

Irrigation is practiced in the dryer parts of the state. At Renmark similar irrigation works to those of Mildura in Victoria have been carried out. Irrigation by artesian wells is found to be practicable at several places in the neighborhood of Lake Eyre, which is the lowest-lying part of Australia. Further north the telegraph line passes through many well-grassed regions which may some day be settled, and other grassy tracts are known to border some of the river courses of this region. The most important of these rivers is the Finke, which flows southeastwards from the Macdonnell ranges (on the Tropic of Capricorn), but dries up before reaching Lake Eyre.

The northern terriotry of Australia, formerly a part of South Australia, was placed under the direct government of the Commonwealth in 1910. Chief town is Palmerston, on Port Darwin.

The capital of the state is Adelaide, situated near the east side of the Gulf of St. Vincent. It was founded in 1837, and named after the queen-consort of William IV. About seven miles from the city stands Port Adelaide, on a small inlet opening out of the Gulf of St. Vincent.

Burra Burra, about 100 miles north of Adelaide, is the seat of the chief inland copper mines, but the principal copper mines in the colony are those of Moonta, on the peninsula between Spencer and St. Vincent gulfs. From a neighboring port some of the ore is shipped for smelting to Newcastle in New South Wales, in vessels which bring back coal to carry on smelting at the South Australian port.

Port Augusta is a wheat port at the head, Port Piric another on the east side of Spencer Gulf, and Port Linoln, a third, near the south end of Eyre's Peninsula.

## WESTERN AUSTRALIA

Ports: Albany, Bunbury, Esperance, Flinders Bay, Princess Royal Harbor, Fremantle, Perth.

Trade for year ending June 30, 1918:

Imports: £2,505,404. Exports: £2,057,986.

The wheat yield for the 1917-18 season shows a decline as compared to the two previous seasons, and is about 50 per cent less than the crop produced three years ago.

1915-16 1916-17 1917-18 Bushels Bushels Bushels 18,236,355 16,103,216 9,304,995

Western Australia is the largest gold producing state of the Commonwealth, yielding an average of \$25,000,000 annually. The output in 1917 was 970,317 fine oz. The chief exports of the state are grain, wool, hides, skins, mallet and wattle bark.

The state has over 3,000 miles of railways, excluding the new Transcontinental line opened in 1917.

Perth, the capital, is one of the most beautiful cities in Australia, besides being one of the most up-to-date.

The city has been almost entirely rebuilt since the outbreak of the goldfields, and therefore possesses all of the latest English and American ideas in architecture. Similar advances have been made in business methods.

Western Australia is the largest of all the states of the Commonwealth, having an area of 975,920 square miles, comprising the whole of Australia west of the 120th meridian. It is also the least populous. The state had 1,679,686 acres under crop during the 1917-18

season

The vast deserts belonging to it will always cause it to be more imposing in extent than population, and even in the principal settled area, the district in the southwest, which receives autumn and winter rains brought by northwest winds, corresponding to the scuthwest winds of western Europe, the population is very sparse. This is largely owing to the character of Though there is much good soil, the the country. fertile districts are scattered, and the best land for European settlers is far from what was, till the construction of the excellent harbor of Fremantle, the only good harbor of the settled district, that of King Georges' Sound. Fine hard timber has always been an important product of this state. But the population of this part of Australia did not begin to develop until the discovery of important goldfields in the east. The most productive are the adjoining fields of Coolgardie and Kalgoorlie in about 31 degrees South, but so far in the interior that the industry was long greatly hindered by the lack of water. A plentiful supply is now, how-ever (since January, 1903), pumped from a vast res-ervoir about 25 miles from Perth at a distance of 325 miles from Coolgardie and 350 from Kalgoorlie. Before the discovery of the Coolgardie goldfield in 1891 the population of Western Australia did not exceed 50,000. The Murchison goldfield, of which the chief center is Cuo, lies in about 27½ degrees South. In the southwest of the state on the Collie River are important deposits of coal, which is exported from Bunbury, a place of export also for the hard timber of the state. In the northern parts of Western Australia pearl fisheries are carried on along the coast, but this industry is threatened by the legislation of the Australian Commonwealth against the employment of colored labor. The capitalists engaged in the industry contemplate, it is said, carrying it on so far as possible from Dutch New Guinea. Gold also exists in the interior of this part of Western Australia, and good pasture lands have attracted settlers. The chief pastures are in Kimberlev District, along the banks of the Fitzroy River, which flows into King Sound, about 17½ degrees South. The capital of the state is Perth, on the Swan River, about 12 miles above its port, Fremantle, on the west coast. Albany, on King George's Sound, 360 miles distant from Perth, is the place where the first settlement was made on West Australian territory (in 1826). The Great Western Railway began operation in November, 1917, connecting east and west Kalgoorlie to Port Augusta.

The population of the state June 30, 1918, was 311,121 the capital city of Perth accounting for about 140,000 of this number. Large shipments of wheat and wool are made from Fremantle, Geraldton and Albany (King George's Sound) and an extensive trade has been developed between Fremantle and Singapore and India in horses and cattle. The bark of the mallet tree (indigenous to Western Australia) was quite a large trade with Germany prior to the war. It is largely used in the dyeing and tanning trades and both this and wattle bark (which is also produced in large quantities) should find a good market in United States of America.

#### Consular Representatives

Belgium: G. F. Payne, consul, Perth. Chile: J. H. Noble, consul, Perth.

Denmark: R. Strelitz, consul, Fremantle; P. Strelitz, acting consul.

France: D. G. Gawler, consular agent, Fremantle and Perth.

Greece: H. P. Downing, vice consul, Fremantle.

Italy: L. Ratazzi, consular agent, Fremantle; H. McA. Henning, consular agent, Perth.

Japan: Archie Male, honorary consul, Broome. Netherlands: P. Strelitz, consul, Fremantle.

Norway: R. S. Haynes, consul, Perth; A. Stang, vice consul, Fremantle; A. Y. Hassell, vice consul, Albany. Sweden: R. Strelitz, consul, Fremantle; S. J. Hay-

nes, vice-consul, Albany.

United States: F. W. Burke, consular agent, Fremantle; F. R. Dymes, consular agent, Albert,

#### TASMANIA

Ports: Hobart, Launceston.

Area: 26,215 square miles.

Population: 1917 estimate, 203,177.

Principal Imports: Cotton manufactures, woollens,

Principal imports: Cotton manufactures, wooliens, machinery, carriages, iron, cutlery.

Principal Exports: Grain, hides, skins, wool, copper, tin, jam, timber, bark, gold, silver, hcps.

Tasmania produces silver, tin, copper and lead in large quantities and there are also large coal seams of good quality. Almost \$10,000,000 of metals are produced annually. The island has altogether produced about \$2,000,000 worth of minerals. There are various industries such as flour mills, saw mills, jam, butter and cheese factories, breweries, and tanneries.

This state consists of the island so called, together with the smaller islands adjacent. It is separated from Victoria by Bass Strait. Like Victoria and Queensland, the state was originally a dependency of New South Wales, and the first settlement upon it was a convict establishment formed in 1803, but it was made independent in 1825. The surface of the main island is in great part high. A bleak tableland, from 2,000 to 3,000 feet in height, occupies the middle and a large part of the western half of the island, and is crowned by mountains, and cleft by deep chasms through which issue the torrents which come to form the rivers of the west coast. To the east of this tableland lies a tolerably level and open district, which forms the great grazing ground of the state. Elsewhere the colonists have had to contend with land more or less heavily timbered. The climate is somewhat warmer than that of England. very suitable for all English crops, and specially well adapted for fruits. Copper (at Mount Lyell in the west near Macquarie Harbor), tin (at Mount Bischoff in the northwest and elsewhere), and gold are important minerals, and coal mines and oil shale (the latter near Latrobe in the north) are also worked. The capital is Hobart, at the end of the island farthest from Australia, an inconveniece which is, however, outweighed by the excellence of its harbor, formed by the estuary of the Derwent. Launceston is at the head of navigation on the Tamar, 40 miles from the mouth of the estuary known as Port Dalrymple, on the side nearest to Australia.

Trade for year ending June 30, 1918. Imports, £489,249. Exports, £960,023.

The wheat yield for the 1917-18 season shows a tremendous drop as compared with the harvest of 1915-16. In 1915-16 the yield amounted to 993,790 bushels, in 1916-17, 348,330 bushels, and in 1917-18, 252,383.

## **NEW ZEALAND**

Ports: Akaroa, Auckland, Bluff Harbor, Dunedin, Invercargill, Nelson, New Plymouth, Oamura, Port Lyttleton, Tauranga, Timaru, Wanganui, Wellington,

This colony (first settled in 1840 and styled by proclamation in September, 1907, a Dominion) consists mainly of two large islands and one smaller one, situated at the distance of about 1,000 miles from the nearest points of the southeast coast of Australia. The large islands are usually known as the North and the South Island (frequently called the Middle Island), and are separated from each

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Kauri Gum Ready for Export-Copyrighted by Underwood & Underwood

other by Cook Strait. The smaller island is called Stewart Island, and is separated from the South Island by Foveaux Strait.

Besides the main islands just mentioned New Zealand possesses several groups of small islands at the distance of from 150 to 350 miles. The principal are the Chatham Islands to the east, the Auckland Islands to the south, and the fertile group of the Kermadec Islands to the northeast.

The coast line of New Zealand is in most places high and rocky, especially on the west coast. In the extreme southwest it is broken up by numerous inlets with very steep and lofty cliff shores, resembling the fiords of Norway.

The capital of the colony is Wellington, in the south of the North Island on an inlet from Cook Strait, forming a safe and commodious harbor (Port Nicholson). It is about 1,270 miles from Sydney. Auckland, on a narrow isthmus of the long peninsula of the North Island which runs out to the northwest, is the largest town in New Zealand, and was once the seat of government. It is a calling station for steamers from San Francisco to Sydney, and as it lies on the east side of the isthmus (the west side having only a shallow harbor), vessels from Auckland to Sydney have to sail around the northern end of the island. In the South Island, the chief towns are Christchurch and Dunedin. Christchurch is the principal town on the Canterbury Plains. It is situated a few miles from the east coast, and separated by a tunnelled hill from its port, Lyttelton, situated on one of the inlets of Banks Peninsula.

#### Greatest Trade with England

Dunedin stands at the head of an inlet further south, in the old province of Otago, and is the port of the principal goldfields of New Zealand. Large ocean vessels have to stop at Port Chalmers, at the mouth of the inlet. Invercargill is the chief town on Foveaux Strait; its port, for large vessels, is Bluff Harbor. Greymouth and Westport are the ports of the principal New Zealand coal fields, on the west side of the South Island. The coal obtained from the Brunner Mine and dispatched from the former port is of high quality. As a steam coal it is said to be 20 per cent better than New South Wales coal.

Three-fourths of the trade is with Great Britain; most

Three-fourths of the trade is with Great Britain; most of the remainder is with Australia, India and Fiji. The trade with the United States is about one-sixteenth of the total foreign commerce. The largest imports are clothing and textiles, iron and steel goods, paper and stationery, sugar, and spirits. The leading exports are wool, frozen meat, gold, butter and cheese, kauri gum, grain, flour and tallow.

#### New Zealand Trade for Six Months

The imports into New Zealand for the first six months of 1918 were valued at \$55,867,182, as compared with \$51,-535,217 for the first six months of 1917, and \$55,595,363 for the same period of 1914

the same period of 1914.

The following table gives the value of the imports, including specie, from each country, for the first six months of 1918, as compared with the same period in 1917 and 1014.

#### FORM OF DECLARATION FOR NEW ZEALAND

(To be sealed or printed upon invoice)

- I....., do hereby certify as follows:
- (1) That I am\*....., the exporter of the goods specified on this invoice or upon the invoice sealed hereto.
- (2) That the said invoice is in all respects correct and true and that all charges are correctly and separately stated thereon.
- (3) That the said invoice exhibits the fair market value of the said goods when sold for home consumption in like quantity and condition in the principal markets of the country whence and at the time when exported directly to New Zealand, without any deduction (a) on account of bounty, or on account of any royalty actually payable thereon, or payable thereon when sold for home consumption, but not payable when exported; or (b) on account of any discount for export only or on account of any special discount or cash discount except where so clearly and separately specified, or on account of any special consideration whatsoever.
- (4) I also certify (a) that, unless otherwise clearly stated, all prices or discounts specified in the said invoice are allowed to all buyers of similar quantities alike, and that they are not specially cut prices or discounts, or discounts or prices allowed specially to agents on account of a contract to take goods greater in quantity or value than those appearing upon the said invoice within a stated period; (b) that no arrangement or understanding affecting the purchase price of the said goods has been or will be made or entered into between the said exporter and the purchaser, or by anyone on behalf of either of them either by way of special discounts, rebates, salary, compensation, or in any manner whatsoever other than as shown in the said invoice.

	(Signature)	)	• • • • • • • • • • • • • • • • • • • •	
Witness				
Dated at	, this	day of.	191	
*Insert the word "Iname of the firm, as the	oartner", "manager", "chief clerk" case may be.	', "principal" or "principal	official", giving the rank and t	he

NOTE—Goods shipped to New Zealand by export commission houses or through forwarders should be accompanied by a manufacturer's invoice in order to establish conclusively the American origin of the goods.

	First	six months	of—
Countries—	1914	1917	1918
United Kingdom	29,922,410	\$23,986,385	\$20,510,473
Canada	1,205,237	1,376,372	2,499,434
Australia	9,581,627	8,679,811	12,310,931
Belgium	360,578	2,015	
France	385,485	93,684	110,163
Germany	1,786,244	3,412	1,528
Italy	165,227	142,797	107,709
Netherlands	242,037	<b>67,</b> 668	103,409
Sweden	200,021	286,305	252,513
China	81,358	164,064	249,802
Japan	331,165	1,490,838	2,331,384
Philippine Islands	47,5€0	40,747	149,070
United States	5,779,641	9,367,457	12,114,111
All others	5,397,773	5,833,662	5,126,655
Total\$	55,595,363	\$51,535,217	\$55,867,182

Imports from the United Kingdom showed a marked decrease during the first six months of 1918, as compared with the first months of 1914 and 1917, with large gains from Canada, Australia, Japan, and the United States, the United States having made about as great a gain as the United Kingdom lost. The gain from Australia is probably due largely to reshipments from the United States and United Kingdom.

The exports of dairy products from New Zealand for the year ended March 31, 1918, were valued at \$33,917,086. There were forty-two steamers loaded with dairy products for the year ended April 30, 1918, as compared with 53 steamers for the year ended April 30, 1917. The cold storage plants are now well filled with butter and cheese.

During the first three months of 1918 there were imported 1,171 motor cars against 1,115 for the first three months of 1917, of which a very large proportion came from the United States.

Fresh apples to the amount of 60,661 cases were imported into the country in 1918, and the majority came from the United States and Canada. During the year 137,867 cases of oranges were imported, practically all coming from the South Pacific Islands. The grand total of imports of cases of fruit for the year ended March 31, 1918, was 580,135, as compared with 637,957 cases for the previous 12 months.

According to information compiled by the Minister of Customs of New Zealand the principal articles imported from the United States in 1917 were as follows: Boots and shoes, cotton piece goods, fancy goods and toys, glass (plate, window, etc.), hardware, hosiery, kinematograph films, leather (sole), motor vehicles, raisins, rubber, tires for automobiles, etc.



Seraping Kauri Gum, One of New Zealand's Important Exports

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#### CHILE

Ports: Antofagasta, Arica, Caldera, Coquimbo, Coronel, Huasco, Iquique, Pisagua, Puerto Montt, Punta Arenas, San Carlos De Ancud, Talcahuano, Taltal, Tocopilla, Valparaiso.

United States Consulates at Antofagasta, Arica, Iquique, Punta Arenas, Valparaiso, Caldera, Coquimbo, Cruz Grande. Talcahuano.

Population: 5,000,000; 18 persons per square mile.

Area: 291,500 square miles. Imports: (1917) \$129,603,115. Exports: (1917) \$259,985,495.

The foodstuffs trade of the United States with Chile in the last three fiscal years is as follows:

## United States Imports of Chilean Foodstuffs

	1916	1917	1918
Articles—	Bushels	Bushels	Bushels
Beans and lentils	50,541	739,477	338,039
Oats			56,793
Peas (dried)	<b>360</b>	144,003	67,218

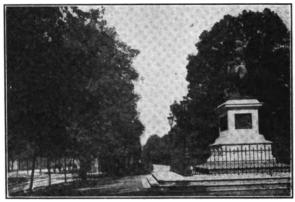
#### United States Exports of Foodstuffs to Chile.

1916	1917	1918
9,213	333	139
		13,724
		170
	421,234	546,803
		2,124
	9,407,693	7,905,430
	48	
493,403	<i>7</i> 9,99 <i>7</i>	2,588
		901
	448	597
	9,213  190,507 7,295,271 526,942	9,213 333 

The latest figures available for imports of nitrate into the United States are for the twelve months ending June 30, 1917. The importations amounted to 1,246,508 tons. No figures for the output of nitrate have been published since the opening of the European war. The output was not far from 3,000,000 tons and about half or even more came to this country annually.

Chile, a republic, in which whites predominate, possessing the whole of the coast strip south of Peru, together with the islands that fringe the coast, including part of Terra del Fuego, and both sides of the Straits of Magellan except in the extreme east. The northern portion of the country is a continuation of the desert strip on the coast of Peru, and is valuable solely for its mineral products—guano (near the coast from the frontier to about 21½ degrees south), nitrate of soda, or cubic nitre, as it is also called (in the same latitude, but further inland), gold, silver, and copper. Copper is even more abundant further south, along the base of the Andes, north and south of Coquimbo. Silver is also found more abundantly to the south of Copiapo. The middle portion, between about 33 and 38 degrees South, contains the bulk of the population. The agricultural products are mainly wheat, barley, and southern fruits—similar, in fact, to those of Spain and California, which have a climate resembling that of the more populous parts of Chile. The temperature, however, is somewhat lower, so that oranges are not grown as a commercial product. In some parts of the north there are some admirable irrigation works.

The capital is Santiago, population 600,000, and its port is Valparaiso, on a fine bay looking to the north. Here is received the great bulk of the imports, but since the greater part of the exports consists of mineral produce, chiefly nitrate of soda, copper, and guano, the northern port of Iquique, whence most of the nitrate and guano is shipped, has the largest share in the export trade. Valparaiso coming only second, and Pisagua (another northern port), and Coquimbo next in order. Next to minerals, wheat and other agricultural produce form the chief exports. The leading imports are manufactured articles, coal and iron. The United Kingdom receives the bulk of the exports and takes the first place in the import trade. There is a considerable import trade in cattle and other animals from the Argentine Republic across the passes of the Andes, but the export trade by these routes is very scanty.



Fashionable Drive in Santiage

The passes chiefly used are those near the latitude of Santiago, the Portillo and the Uspallata passes, the former nearly 14,000, the latter about 12,300 feet in height.

The Straits of Magellan are stormy and washed by strong tides, and hence difficult of navigation, so that sailing vessels still prefer the equally stormy, but for them less dangerous, route round Cape Horn, in the south of Terra del Fuego.

Spanish is the official language and correspondence with business men in that country should be in Spanish.

#### Rules and Regulations

On arrival of vessels at a Chilean port, and before communication with the shore, masters must wait the visit of the port captain and customs house officer, to whom the master must deliver a general manifest of the cargo, or his bill of lading, and a note of the provisions aboard his vessel. Twenty-four hours is allowed to correct any errors or omissions, and should any appear after this period the vessel is subject to a heavy fine. The average expense for entering a Chilean port, for anchorage, harbor master and other dues, is about \$30. Hospital dues are 10c per registered ton, and are payable but once annually, counting from the first of January.

Bill of health: All vessels bound to ports on this coast

Bill of health: All vessels bound to ports on this coast from any port of the world should be furnished with a bill of health, duly vised by the Chilean consul at the port of departure, otherwise they will be subjected upon arrival to quarantine. Before sailing for a Chilean port, the consul requires to see the passenger list and signed manifest of the cargo, with its approximate value.

#### Climate

The climate from Puerto Montt to Valparaiso is equable and mild, but during the winter months, from May to August, maritime operations are sometimes handicapped on account of the heavy storms and work must be temporarily suspended.

#### Port Facilities

Chile has few facilities in the way of harbors and docks, but the government is taking active part in the betterment of the conditions and piers and moles are being constructed which will greatly benefit commerce. Port works are now in construction at Valparaiso, San Antonio and Talcahuano. A plan for the building of a modern port with docks, piers and breakwater is on foot at Antofogasta which became one of the most important ports of Chile during the European war because of the immense exportation of nitrates which pass through this port.

#### Anchorage

In all Chilian ports steamers must anchor at some distance from shore. The distance is indicated by the port authorities except where ship companies have their own buoys. The loading and unloading must be done by means of lighters which discharge the cargoes and passengers on small wharves or on the beach. In Valparaiso there is a Fiscal Mole running from the Customs House at which two steamers may dock to discharge Customs House cargoes. This mole is reserved for the Pacific Steam Navigation Co.'s Straits Service, but when not in use may be occupied by any vessel coming on a fixed itinerary.

#### Handling Cargo

The cost of handling cargo by means of lighters varies at each port. The charges are so much per ton according to the rates fixed by the various companies which control the lighters and the longshoremen. There is no fixed price and each company has its arrangements and prices which will not be made public, since each one may, perhaps, have a different rate or arrangement with the workmen and lighter men. There is a published rate which has been agreed to by a number of large companies and exporters in Valparaiso fixing the rate at \$3, Chilian, from 60 to 75 cents American gold, for lighterage and discharge per ton for Customs cargoes. Smaller than ton lots are delivered

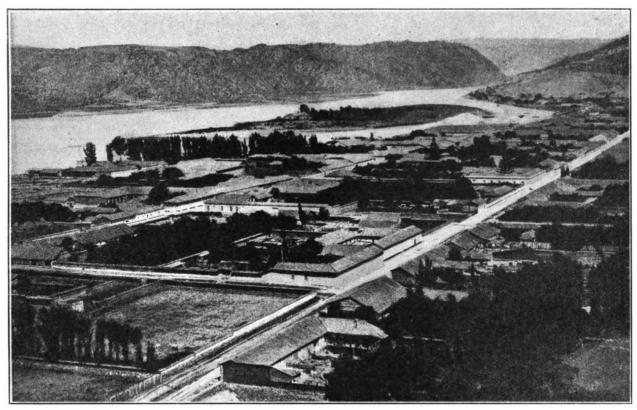
## Fac-Simile CONSULAR INVOICE (CHILE)

Consulado General de Chile en Los Estados Unidos. General Consulate of Chile in the United States.

INVOICE of del vapor steamer	merchandise de	spatched bycon des destine	tino al puerto d for the port	de of		in N	Nueva York, aborded  New York aboard the a consignacion  to the consignment oro Americane
of		for account of		value o			
Marcas Marks				Contenido Contents	Weight in	Kilos por lto Kilograms Item	Valor de Cada Mercaderia Value of each Item
					Neto Net	Bruto Gross	
				New	York		19

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(Signed by Shipper).....



General View of Constitucion, Chile

at less than \$3 and a comprehensive list is published of the articles and the prices. This is only a general agreement and has no force, necessarily, outside of the parties signing the agreement, but their rate serves as a general reflection of the prices prevailing at the ports for discharging, but no company publishes the rates or agreements of loading cargoes and the price varies with the season and the visible supply of freight.

#### Cargo

It must be remembered that the current language of Chile is Spanish and that all packages of cargo requiring annotation should be stenciled in Spanish. The attention of shippers is called to the fact that marking on cases with words "this side up," "with care" is worthless because it will not be understood. It would be better to mark in Spanish "cuidado" (with care), "este lado para arriba" (this side up), "no usen ganchos" (do not use hooks), and similar terms. It is obligatory that all goods and packages of whatever nature entering Chile, be stenciled, and the weight marked in kilos in black letters at least two inches high. Failure to do this incurs a fine.

#### **Ports**

These are classified as major and minor ports. A major port "puerto mayor" is a port where goods from foreign countries can be imported direct. A minor port "puerto menor" is a port where the goods have to be cleared from a major port or go through the Customs House of a major port before being sent to a minor port. The goods are transhipped at minor ports on vessels that make the local ports. The following is a list of the major ports of Chile in order from north to south: Arica, Pisagua, Iquique, Tocopilla, Antofogasta, Taltal, Caldera, Huasco, Coquimbo, Valparaiso, Talcahuano, Voronel, Valdivia, Ancud, Puerto Montt.

#### Consular Regulations

Consular invoices may now be arranged in English or Spanish. In cases of short shipment, a letter of correc-

tion may be taken out which must be certified by the Chilean Consul. A fee of \$3 will be charged by the Chilean Consul for the vise of this letter of correction. This obviates the necessity for paying double Consul fees.

This obviates the necessity for paying double Consul fees. Severe penalties are imposed by the Chilean Government for failure to properly stencil the full marks on the various consignments in accordance with the regulations. All particulars in connection with the mark, including letters, numerals, destination, also any symbols used in conjunction therewith, such as squares, triangles, diamonds, etc., must be clearly stenciled in full on every package. The gross kilos must likewise be distinctly stenciled and words "Gross Kilos" be shown alongside the numerals of weight. Shipments delivered at outgoing steamship pier will not be accepted unless they are fully and properly stenciled. Stenciled letters, numerals, etc., should not be smaller than, say 2½ or 3 inches in depth, unless the size of the package renders this procedure impossible of accomplishment. Charges: For each certification of bill of lading, 50c.

Charges: For each certification of bill of lading, 50c. Certification of each set of consular invoices up to a valuation of \$200, \$2. For larger amounts, 50c per \$100. Minimum charge on bill of lading is usually \$4.

### **BOLIVIA**

Area, 708,195, sq. miles. Population: 2,267,935.

Capital, La Paz, population, 82,000.

Exports: (1917) \$63,099,221. Imports: (1917) \$20,088,498.

Principal Exports: Tin ore, rubber, silver, copper ore, bismuth, cocoa, wolfram, zinc, cattle hides, lead ore.

Principal Imports: Iron and steel products, textiles (cotton and wool), machinery, arms and ammunition, sugar, flour, coal, railway supplies, aerated waters, wines.

The republic of Bolivia is the third largest of the South American Republics and one of the two countries that has no sea coast. But the importance of its import and export trade and the fact that the rich interior is

reached by three railroads leading from three important Pacific Ports to La Paz, the capital, and the nature and richness of its natural products make it necessary to be mentioned in connection with the west coast trade.

The first port where shipments are landed on the Pacific side is that of Mollendo, Peru, which is distant 525 miles from the capital. The ports of Arica and Antofogasta are both connected with La Paz by rail, the shortest distance being from Arica 274 miles, about half the number of miles, or less, than from Mollendo or Antofagasta.

The mountains of Bolivia abound in mineral wealth while the tillable lands will produce practically every known fruit or agricultural product. About one-quarter of the world's output of tin is produced in Bolivia and gold has been produced in varying quantities since 1540. The republic occúpies a prominent place among the very few bismuth producing countries. The output in the last five years has amounted to 663 tons. Next to tin the most important product of Bolivia is rubber. The export value recently reached the sum of \$6,00,000 in one year. There is an extensive district where oil has been found in large quantities, but remote from transportation lines. With more actual railroads in proportion to area and population than the other republics of Scuth America and liberal concessions now offered for more mileage, the transportation problem of Bolivia will offer fewer difficulties and it will become more and more important in the world trade.

The region of the Gran Chaco and the Chaco Boreal, the immediate section of the country surrounding the oil district of Bolivia and along the proposed route from the Paraguay river, is without doubt the richest agricultural district in South America. The area of the two Chacos comprises approximately 140,000 square miles. The soil is a rich sandy loam, and contrary to general rules, in timber lands, is of great depth. The temperature ranges from 40 degrees Fahrenheit to 120 degrees with more often the latter temperature than the former. It has its wet and dry seasons, but the rainfall is very variable, in some parts raining throughout the year, while in other parts one or two rains per year is the general rule. For this reason and on account of the varying temperature, due to different altitudes, it is possible to find any climate desired by the agriculturist. Water is found near the surface in all parts, so that even in the dryest regions the grass remains green throughout the year, while heavy dews fall at night.

#### Country As Yet Undeveloped

The country is as yet altogether undeveloped. It is inhabited only by half-breeds and Indians whose sole business is stock raising. The only agricultural implement is the spade and their only crops are corn, sugar cane and tobacco. Of corn and cane a family will plant a half acre to each with a few plants of tobacco. Here and there, however, one finds an outsider with a little industry who has produced some good crops, enough to show what the



Bird's-eye View of La Paz

soil and climate will do. All through this country there are missions in charge of priests who have taught the Indians what they know of agriculture and civilization. They have made experiments and have produced the following crops: Corn, alfalfa, cotton, potatoes, garden stuffs, coffee, rice, mandioca, barley, oranges, sugar cane, lemons, tangerines, limes, melons, bananas, pine apples, grapes and different kinds of tropical fruits.

The cane of the Bolivian Chaco contains as high as 14 per cent saccharine matter, while that of the Argentine country, where the large sugar plantations are located, contains but 8 per cent. The climate is especially adapted for cotton or rice. One farmer near Yacuiba produced rice almost equal to the best Carolina rice and with a very high yield to the acreage. Cotton is not grown yet as a business. Some small tracts are under cultivation which promise as high a yield as the Brownsville district of Texas. This country will surely become the rice and cotton producing district of South America. With the development of the railway and the oil districts, rice and cotton plantations together with general farming and stock raising, would in a short time, become general throughout the Chaco.

#### Rice Producing Possibilities

As to the possibilities for rice production in South America an idea can be found from the exports of this article to Chile in the year 1911, which has been increased without doubt since that time. In 1911 Chile imported 12,452 tons of rice or 12,452,000 kilos of 2.2 pounds. Judging then from population in the other countries we may estimate the consumption of rice as follows: Argentina, 24,000,000 kilos; Paraguay, 3,000,000 kilos; Uruguay, 3,000,000 kilos; a total of 42,452,000 kilos. The greater part of this rice comes from Europe, the United States and India. There is no reason why rice produced on the border of Argentina and near a water highway can not compete with rice brought from India and the United States, especially as labor in the Chaco is no higher than that in India and the rice produced is of superior quality. As to cotton there are no figures to be obtained, as South America does not import the raw material to any extent, but spinning mills and the production of cotton may be assumed as one branch of industry to be developed.

#### The Lumber Industry

Another undeveloped business in the Chaco is that of lumber. The Villa Montes region, or rather from the Rio Bermejo to considerably east of Villa Montes there is a forest of Ships cedar broken in places by forests of other valuable woods. Near Villa Montes the cedar lumber per acre is about 40,000 square feet. These cedar trees are sometimes of huge size, it being no uncommon thing to find trees three feet thick at the base with a diameter of two feet 35 to 40 feet from the ground. Logs are now hauled from near Embarcacion to Buenos Ayres by rail a distance of over 1,500 kilometers. The logs could be transported by water either via the Bermejo or Paraguay rivers.

Among the woods of value found in the Chaco are the nogal, or hard red wood, very good for funiture making; timboy, a strong white wood; laurel, good for rough lumber; quebracho, the famous South American "iron wood"; guyacan, hard as quebracho, but flexible as hickory and used by the Indians for bows; sete, dark brown, fine grained and hard; quina, red and hard; roble, a hard white wood resembling oak; and cedar of Lebanon in a small amount. The most common soft wood is Piroche, a tree having the form of a vase, the trunk of which attains a diameter of six feet.

#### Why So Long Unexplored

It may be asked how it is that these three products, oil, timber and agriculture, have remained without exploitation. The answer to the whole question is transportation, and it appears that the problem could be solved in the manner and by the routes proposed, or, in other words, taking advantage of the possibilities nature has placed at hand. Heretofore the question of civilization and colonization, with its attendant features and problems, have been





the same as in other countries. Colonization of a country always begins at the coast and works inward. savage tribes are gradually pushed back until they make a last stand against the encroachments of the white man. The same conditions have obtained in Bolivia as in the United States and the Chaco region was the last stand of the Indians and this region has now been entirely civilized and is free from any danger from the natives, as they are now generally peaceful in all parts of this country. There remains nothing to do to make this region of the Chaco the principal agricultural district and the garden spot of South America except to build railways and to carry forward the work of colonization.

## **PERU**

Ports: Callao, Pacasmayo, Paita, Salaverry. United States Consulates at Callao, Lima, Cerro de Pasco, Mollendo, Paita, Salaverry.

Population: 4,500,000: average persons per square mile,

Area: 829,000 square miles.

#### Foreign Trade for 1917

r or orbit rings in room					
Imports\$65,623,856					
Exports 90,606,997					
Peru is a republic lying to the south of Ecuador oc-					
cupying territory on the Pacific Ocean about 1,000 miles					

in length by 70 miles in width. The population has a large percentage of Indians, who are descendents of the Incas. Peruvian cotton and cane sugar are the principal agricultural products exported. Peru is composed of three zones :

(1) A rainless coast strip, fertilized only here and there by rivers from the Andes, which afford the means of irrigation for sugar and cotton plantations tended by Chinese coolies. (2) The Sierra, or valleys and tablelands of the Andes. On one of the table-lands lies (partly in Bolivia) Lake Titicaca, the largest lake in South America, at the height of 12,600 feet above the sea level. At this height even barley seldom ripens, and the only regular find from a native plant called guinoa (wholly unlike our cereals). (3) The Montana, the region on the eastern slope of the Andes, containing the headwaters of the Amazon, a district largely covered with impenetrable forests, of which the most valuable product is rubber. The capital of the country is Lima, a city of nearly 200,000 inhabitants which lies in a fertile plain about 8 miles from the coast and the seaport of Callao. The city is in the dry zone a pleasant climate, seldom disturbed by rain.

The chief exports are sugar, silver, copper and other metals or ores, cotton and llama, vicuna and sheeps' wool, cochineal, hides, borates, guano, rice, rubber, coca, alcohol, cotton seed; the sugar and cotton derived from the sierra. The mineral wealth for which Peru (including Bolivia or Upper Peru) was noted in Spanish times was long neglected, but in recent years renewed importance has been conferred on it by the laying of railways.

The chief imports are minerals and metals, cottons, wheat, machinery, merchandise, woollens, textile fabrics, medicines, livestock and silk.

#### U. S. Exports of Agricultural Implements

Articles—	1916	1917	1918
Cultivators and plows	.\$27,995	\$56,072	\$96,669 527
Hay rakes and tedders			527
Mowers and reapers			1,048
Planters and seeders			4,557
Threshers	. 189	3,854	2,739
All others	. 20,059	50,675	69,576

Totals .....\$48,243 \$110.601 \$175,116 As these implements do not include the special machines needed in the sugar and cotton industries, for which there is a growing demand, it will be seen that Peru offers a field worthy of the careful consideration of American exporters of agricultural machinery.

#### Fac-Simile

#### CONSULAR INVOICE (PERU)

		•					
INVOICE of me puerto de the port of	erchandise shippe	ed by .a bordo de on board t	l Vapor he Steamer	a los Sres	from thCapitan Captain	e port of New	York destined to con with
Talisier to or in							
Marcas de los Bultos Marks of the Packages	Numero de Cada Bulto Number of each Package		iltos kages Clase	Contenido Contents	Peso Netro, Metros, Docenas, Etc. Net Weight, Metres, Dozens.	Peso Bruto en Kilos Gross Weight in Kilograms	Valor Value Dollars Centavos Cents
tue racrages	Cacii Factage	Number	Kind		Etc.	11110812110	Cents
			packages shot together but s instance: the should not be	for different kinds of ald not be grouped tated separately; for weights of cases given together with or crates, but a sep-			

Note.—Write the total value of the shipment at foot of invoice (in Spanish only), followed by this declaration: Declaramos que el valor arriba anotada es el verdadero de las mercancias.

(Signed by Shipper).....

arate entry made for the weights



#### Customs Regulations

Shipmasters calling at Peruvian ports must correctly manifest the number of packages and marks, as the highest rate of duty on any package on board is collected on all packages manifested over the actual number. Bill of health required, under penalty of five and five days' quarantine probation. All vessels from Colombian ports are required to call at Paita for fumigation. Statement of gross and net weight of each package, classification of goods and exact declaration of value of each article required, in kilos. Labor conditions are critical at all times at Peruvian ports, the government taking no hand in labor disputes, and much loss is occasioned by owners on this account,

Shippers are now required to endorse the marks, num-

bers, etc., on three copies of the bill of lading.

Packages may be marked (plainly) either with brush or stencil.

Four copies of consular invoices in Spanish are required.

Invoice for certification must be presented before 3 p. m.

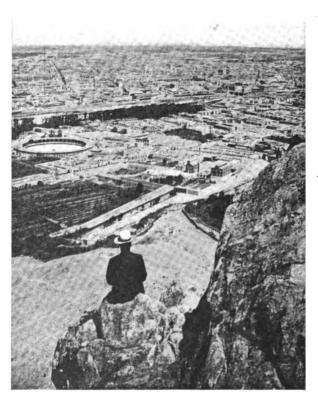
on the day the vessel sails.

Goods may be consigned either "direct" or "to order." Callao and Mollendo are the only ports where explosives firearms, revolvers, etc., can be landed unless the consignee has obtained a special permit from the Minister of the Interior. The Prefecture at Iquitos issues permits for that port.

A certificate from the health authorities at port of shipment must accompany all shipments of livestock and must be presented at the consulate stating that the animals

are free from any disease whatever.

In shipping grain, seeds, plants, trees, etc., a certificate from the representative of the Bureau of Agriculture in Washington residing in the state from which the seeds, etc., proceed must be obtained and presented to the Peruvian Consul for legalization. This certificate must guarantee the seeds, plants, etc., to be free from any plant illness. Fee for legalizing the document, \$2.



Bird's-eve View of Lima

Port Charges: Tonnage, 20c silver per registered ton, payable semi-annually. Hospital dues, 4c silver per registered ton, payable semi-annually. Darsena dues, 12c per registered ton. Light dues, 2c silver per registered ton, payable at each entry. Dock dues, 12c silver per registered ton. Doctor's visit, \$4.50. Bill of health when registered \$5.

### **ECUADOR**

Ports: Guavaquil, Esmeraldas, Puerto Bolivar, Manta

Area: 116,000 square miles.

Population: 1,500,000, or about 13 to the square mile. Packages may be marked with stencil or brush.

Seven copies (in Spanish) of consular invoices are required, of which the Consul retains four.

Importation of rifles, carbines, cartridges and war material is prohibited, unless consigned to the government, but firearms, cartridges, etc., for sporting purposes may be shipped.

Shipments may be made either "direct" or "to order." United States Consulates at Guayaquil, Bahia de

Caraquez, Esmeraldas.

Ecuador, a republic chiefly south of the equator, but which owes its name to the fact that its capital, Quito, is almost under that line. Quito lies, like Bogota, between two chains of the Andes, its elevation being between 9,000 and 10,000 feet. The only important seaport is Guayaquil, whence cacao, grown on the western low-lands, is exported. Other exports are Panama hats, coffee, hides, wool, gold bars, caucho, bananas, rice, cotton seed, orchillas. To Ecuador belong also the Galapogos, or Turtle Islands, a group situated on the equator, about 700 miles to the west.

The imports from France during the first quarter of 1918 are but 14 per cent of those for the corresponding period of 1917; from Spain, about 25 per cent; from the United Kingdom, 68 per cent and from the United States, less than 45 per cent. Figures for the first three months of the year follow:

	7 411 441 7	January	
Countries—	March, 1917	March, 1918	Decrease
France			\$ 95,415
Spain	119,298	30,336	88,962
United Kingdom		459,469	213,059
United States	1,721,109	768,595	952,514
Exports during th		year of 1917	reached

\$18,500,000 and imports, \$11,000,000.

The chief imports are textiles, foodstuffs, apparel and iron ware. Chief exports are cocoa, ivory, nuts, hats, rubber.

#### Regulations

Two copies of ship's manifest in Spanish must be produced within 24 hours after arrival, together with a list of all stores. A correct list of passengers must be presented to the captain of the port. No communication is allowed with the shore until after the visit of the port captain, under penalty of \$50 fine. Statement of gross and net weight of each package, classification of goods, and value of each article required.

## **COLOMBIA**

Ports: Buenaventura, Tumaco.

United States Consulates: Cali, Medelin, Santa Marta, Cartagena.

Area: 476,916 square miles. Population: 5,472,604 (census 1912) about 11½ persons to the square mile.

Exports: \$31,579,131. Imports: \$28,922,529.

Principal exports: Coffee, emeralds, gold, cattle, hides, bananas, tagua (ivory) nuts, Panama hats, rubber, sugar. Principal exports: Textiles, foodstuffs and condiments,

metals, railway supplies, pharmaceutical products, soft drinks, wines.

Colombia has an extended coast line on both the Carribean Sea and the Pacific Ocean. Three chains of mountains cross the country, one of these being the source of the Magdalena River which empties into the Carribean Sea. The Magdalena is navigable for over 900 miles. The principal ports of the republic on the Pacific ocean are Buenaventura and Tumaco which are reached by all of the Pacific Coast lines from South American ports and from Panama from the north.

The three mountain ranges produce a variety of climate and products, ranging from temperate to the tropical. Coffee, cacao, sugar cane, tobacco and bananas are successfully grown, and largely exported. The extensive forests contain a number of valuable cabinet and other useful wood and medicinal plants. Vegetable, ivory, and rubber are other products of export, also Panama hats. The mineral wealth of the country has been but little exploited, although the emerald mines furnish the world's chief supply of these gems. Gold is found in every department and silver, platinum, mercury, iron, and lead also exist in paying quantities. Bogota, the capital, is within five degrees of the equator, but because of its situation at the height of 8,000 feet above the sea level, enjoys a healthful climate with a temperature like that of a perpetual spring.

#### Customs Regulations

All cargo destined to points in Colombia must have a consular invoice, showing the gross weight in kilogrammes in every series of packages. (See fac-simile.) Customs charges are by gross weight in all cases. A tonnage tax is paid by all vessels in the amount of \$1.50 gold on every 1.000 kilogrammes of merchandise which is unloaded at any Colombia port. The tax is not charged on vessels in ballast, nor vessels unloading coal, bricks, ice or salt, which items are free. Light dues at all ports are 5c per ton for the first 100 tons, and 2½c per ton for each additional ton.

The Colombian customs law authorizes the clearance of merchandise from the custom house on presentation of the certified consular invoice, together with four copies of the custom house manifest, this latter to be made and signed by the importer or his agent, but does not require the pres-

entation of a bill of lading for this purpose. The clearance must be effected within five days from receipt of the shipment at the custom house.

Packages may be marked with either "direct" or "to

order"

Consignments "to order" are not recognized by Colombian fiscal laws, and the only manner in which such shipments can be made would be by consigning the shipment, under previous agreement with the bank or import agents and the importer, to a bank or import agent. This is done only on rare occasions in this country. The usual custom in vogue among European and American exporters is to ship the merchandise direct to the importer, and if a draft is to be presented for acceptance or payment on delivery at Barranquilla, this is sent through some bank. The house on which the draft is drawn must accept or pay the draft in accordance with its contract with the exporter, or find its credit damaged by failure to do so.

Firearms and cartridges may be shipped only with

written permission of the Consul.

Free importations of raw materials for soap making, books, newspapers and other publications and a reduction of 25 per cent on many articles is permitted when accompanied by a "certificate of origin" showing that the

goods are the products of the United States.

When articles cannot be classified under any tariff heading they are subject to a duty of 60 per cent ad valorem, but, only after giving notice to the Customs Board. It is therefore permissable to include in the consular invoice a statement to the effect that for articles not specifically mentioned in the tariff the decision of the Customs Board will be accepted as final, in case the classification of the local customs officers is appealed from, and in such cases no fine will be imposed for failure to declare the articles under the proper headings. Shotguns, revolvers, cartridges may be shipped only with consent of the Consul, but rifles of small caliber (for target practice only) do not require permit. Importers of explosives, firearms and ammunition must present in addition to the official permit and bond, a certificate of sale from the exporting firm, naming the articles and quantity in each shipment.

Importation of all kinds of meat in which antiseptics have been used as preservatives is prohibited. A certificate for all shipments of meats must state that no antiseptics

## Fac-Simile CONSULAR INVOICE (COLOMBIA, REPUBLIC OF)

FACTURA DE EFECTOS INVOICE OF GOODS

SHIPPED I	puerta de		a bordo del va on board the sa la con to the c	teamer ssignacion de	•••••	
and for acco		Ship	of *Gastos ping Expenses	Valor Value \$		
Numeros Numbers	Numero y Clase de Bultos Number and Class (kind) of Packages	Contenido Contents	Peso Neto en Kilos Net Weight in Kilograms	Peso Bruto Total en Kilos Total Gross Weight in Kilograms	Valor *Value	

The following is a declaration (in Spanish) of the truth of the statements contained in the invoice, and must appear at the foot of invoice over the signature of shipper.

"Bajo juramento declaramos que los precios anotado en este documento son los mismos que cargamos al interesado en la factura comercial, y que los pesos de los bultos estan dados correctamente."

\*The cost of freight, insurance and commission (if any) must be shown in the Consular Invoice, but should not be added to the value given in the last column.

Digitized by

have been used. Meats for consumption in Colombia may only be preserved by means of common salt, nitrate of potash, refrigeration and by a certain heat process. Invoices

by the Consul.

There is a surtax of 5 per cent on the declared value of all merchandise imported by parcels post. Invoices must be produced in duplicate under penalty of an additional surtax, but same need not bear consular certification.

Should the importer fail to receive his copy of the invoice, he may ask the customs collector to issue an extra copy of the certified invoice, for which a small fee is charged for stamped paper.

American exporters who are doing large business with Colombia find this regulation acceptable, if not entirely satisfactory, and continue doing profitable business with Colombian merchants on the basis mentioned.

While it might be possible to bring about an amendment to the customs law, so as to provide for the requirement of the certified bill of lading before delivery of the goods, this might bring about other complications even to the confiscation of the merchandise by the government for failure to clear same from the custom house within the five days specified. Much of the merchandise intended for the in-terior of the country must be cleared by custom house brokers before the mail leaves Barranquilla for the interior, and if clearance of merchandise for Bogota or Medellin, etc., had to await the acceptance of a draft by the importer in those places, it would mean a delay of at least two months in many cases for the merchandise to reach the importer.

## **CENTRAL AMERICA**

Guatemala Salvador Honduras

of merchandise shipped by

Nicaragua Costa Rica Panama

Most Central Americans live on the Pacific slope. Their large towns and plantations occupy a long and narrow zone parallel with the Pacific shores and not very far from them. The western ports have most of the trade; civiliza-

de mercaderias embarcadas por .....

.....su capitan.....

tion, in fact, has mainly developed in the west, while the Atlantic slope is largely wild and unoccupied. These facts are explained by the physical conditions; the hot lowlands of the east receive the tremendous rainfall brought by the moist trade winds; heat and rain produce almost impassable virgin forests, inhabited only by scattered bands of Indians; the forests are rich in hardwoods and rubber, but too unhealthful to be the home of white men. In the west, however, rise mountains with excessive rainfall and a cooler climate as a result of their elevation. As the Pacific Coast has a comparatively moderate rainfall the conditions favorable to planting and other industries are found along that coast and on the plateaus among the

India rubber, mahogany, rosewood, dyewoods, cacao, and bananas grow on the hot lands to an elevation of 2,000 bananas grow on the hot lands to an elevation of 2,000 feet; coffee plantations are scattered over the temperate lands from 2,000 to 6,000 feet; most of the grain and northern vegetables are raised in the cool lands above 6,000 feet. Thus Central America, though wholly within the tropics is enabled by its great diversity of surface to raise the characteristic products of every climate. As the main water divide is near the Pacific, the rivers on the Atlantic close have the longer and gentler courses some Atlantic slope have the longer and gentler course, some of them being navigable for a considerable distance. Railroads have been built from some of the ports to the uplands where coffee is grown. Among the commercial disadvantages are the poor common roads, traversed by twowheeled ox carts, the earthquakes which sometimes inflict great damage, the poverty of the masses, the small development of manufacturing, and the internal political disturb-

## **GUATEMALA**

Ports: Champerico, Ocos, San Jose de Guatemala. United States Consulates at Guatemala, Livingston, Puerto Barrios, and San Jose de Guatemala.

Principal Imports: Flour, food products, manufactures of cotton, iron and leather, railway materials, lumber, wines

and liquors, silk, textiles, agricultural machinery. Total for 1917, \$8,991,573.

of nationality

#### Fac-Simile

## **CONSULAR INVOICE (GUATEMALA)**

FACTURA INVOICE .....a bordo del......de nacionalidad

on board of the

.....con destino a.....

a la consig	gnacion de signment			• • • • • • • • • • • • • • • • • • • •	with destination todel comercio de of								
Marcas y		Cantidad Quantity En	of Pkgs.	Clase	Kilog Gross V	ruto en ramos Veight in grams	Nombre, Clase y Materia	Envaer Merca Net Weigh	eto o Sin s de las derias at or With-	Numero de Merca Number	las derias of Piec <del>es</del>	Valor	
Contra- Marcas	Numeros	guar- ismos	En Letras	Clase	De cada clase de	De todos los bultos	de las Mercad- erias		ppings of chandise	of t Merch			
Marks & Counter- Marks	Numbers	In Figures	In Letters In writing	Kind Class	Bultos (En letras) Of each kind of Package	remitidos En gua- rismos Of all the Packages	Name, Class & Character of the Mer- chandise	En gua- rismos In	En letras In	En gua- rismos In	En letras In	Value	
					In Writing	sent In Figures		Figures	Letters (In Writing)	Figures	Letters (In Writing)		

El infrascrito	de la casa de comercio
de esta	ciudad, calle
Numque firr	na la factura que precede, protesta
y jura ser cierta en todas su	s partes y que procede con legalidad
y buena fe, sujetandose a le	o que disponen las leyes y tribunales
de la Republica de Guate	mala por cualquiera inexactitud o
ilegalidad que dicha factu	ra contenga.

Nueva York......de 19... (Signed by Shipper).....

#### TRANSLATION

.....of the commercial The undersigned..... house of ..... of this city, street ..... number ...... who signs the preceding invoice, de-clares and swears to be true in all particulars, and that he proceeds with legality and good faith, subjecting himself to what is disposed by the laws and tribunals of the Republic of Guatemala for any inexactitude or illegality which said invoice may contain.

Exports: Bananas, coffee, hides, mahogany, rulerude), skins, sugar, chicle. Total for 1917, \$7,809,732. rubber (crude), skins, sugar, chicle.

Area: 48.290 square miles.

Population: (1910), 1.992.000; 40 persons per square mile.

Capital: Guatemala City, population, 125,000.

Means of Approach: Guatemala is accessible from both the Pacific and Atlantic Oceans, from Mexico it is reached by the Pan-American Railway via Agutta, and from Salvador by a well traveled highway.

It is necessary to have five consular invoices in Spanish. two to be forwarded to the consignee while the consul retains three copies. The invoice must show the materials from which the goods are manufactured—silk stockings, linen handkerchiefs, cotton and wool clothing, etc. (See

fac-simile.)

Guatemala is the most important of the five republics; it sells more to foreign lands and buys more from them than any other state. With a very narrow frontage on the Atlantic, most of the country is an elevated plateau. Coffee, the most important crop, grown mostly on large plantations by well-to-do planters, thrives from the Pacific to the center around Coban. Maize and black beans, the staff of life throughout Central America, grown energywhere. staff of life throughout Central America, grow everywhere, All the sugar is consumed at home, the rum distilleries using much of it. The cotton fields and the high, dry sheep pastures supply fibers for the spinners and weavers who ply their trades in the towns. Cattle on the plateaus yield hides for export. Many minerals await development, but mining is in its infancy, the most important being placer gold washing in the south, supplying metal for a small quantity of home-made gold ornaments. Straw, wooden and earthen wares, tobacco, and leather are other industries.

The largest river, the Motagua, is navigable at high water for 100 miles; a railroad extends up its valley to Guatemala, the capital, which is also connected by rail with the Pacific port of San Jose, the leading port, and Champerico, which are merely roadsteads. Much of the rubber, bananas, and other resources are still unavailable for lack of transport.

Guatemala leads in the exports of coffee. This commodity is the largest item in Central American shipments. No other Guatemala export is of much importance, though considerable quantities of bananas, hides, rubber, mahogany and cedar are sold abroad. About an eighth of the coffee comes to the United States. Remainder is sent to Europe.

Cotton goods, hardware, flour, and wine are the largest imports.

Shipments cannot be made "to order."

Firearms, cartridges, gunpowder, etc., must not be shipped except by special permit, to be obtained from the Government by the consignee. A duplicate of this permit is to be sent to the consul at shipping port.

No pharmaceutical preparation of unknown composition can be imported until after it has been examined and approved by the Managing Board of the Faculty of Medicine and Pharmacy (Junta Directiva de la Faculdad). A list of remedies of secret composition the importation of which is authorized is kept by the Custom Houses and all others excluded by others than those conducting legally recognized pharmacies or similar establishments will be confiscated.

## **SALVADOR**

Ports: Acajutla, La Libertad.
United States Consulate at San Salvador.
Area: 7,225 square miles.
Population: 1,700,000.
Capital: San Salvador, population, 75,000.
Imports: Bags for coffee, boots and shoes, corn, wheat, Total for 1917, \$6,796,812.

Exports: Coffee, sugar, bullion and ores, hides and skins, rubber. Total for 1917, \$16,719,166.

Means of Approach: Salvador is accessible by water

by various Pacific Coast lines of steamers. Acajutla is the most important port and is connected by rail with San Salvador, the capital.

#### Fac-Simile CONSULAR INVOICE (SALVADOR)

1			count of	por order y cuent for order and acc				de of
Valor	Procedencia Origin	Nombre y Clase de las Mercaderias Name & Class	os) /eight	Peso B (Kile Gross W (Kilogr	Clase de Bultos Kind of	No. de Bultos No. of	Numero de Cada Bulto Number of	Marca Cac
*Value		of Merchandise	Cada Bulto Totales Each Pkg. Total		Pkgs.	each Pkg. Pkgs.	each Pkg.	Mark
	)N	TRANSLATIO	Total		ara	uray decl	<b>.</b>	

.....palabra de honor que .....Factura que precede, consta de .....folio comprende .......bultos, con peso en junto de ..........Kilogramos y valor total de ......... que la marca y numero de cada bulto, el peso y contenido de los mismos y el precio con que aparecen es el que tiene los bultos remitidos, y con el que figuran en nuestros libros, y que la suma por que van acequirados es de la suma por que van asegurados es de.....

Fechado en New York.....

Por....

Nota.—Cuando se firme "Por," es indispensable dar previo aviso a este Consulado de la persona o personas autorizadas para hacerlo, y dar a reconocer su respectiva firma.

(under oath) upon his word of honor that.....the preceding invoice composed of pages, comprises packages, with total weight of Kilograms and total value of .....that the mark and number of each package, the weight and contents of the same and the prices stated are those which appear in our books, and that the sum for which they are insured is..... New York.....

thorized to do so, and make known their respective signatures.

\*Freight, insurance and other expenses must also be stated on a separate line.

Four copies of consular invoice in Spanish are required, of which the consul retains three. Bills of lading must be certified by consul. (See fac-simile).

Salvador is the smallest country in America. Fronting wholly on the Pacific Coast, practically all of it is available for settlement; it is therefore more densely peopled than any of the other republics. The products distinguishing it from the other countries are balsam of Peru, valued in medicine, and indigo, once the largest export, but now surpassed by coffee, which is three-fifths of the value of the total sales abroad. Salvador has the largest coffee export except Guatemala. There are hundreds of sugar plantations. Cattle, horses and mules are imported from Honduras, as stock raising does not fill the demand. The mining industry is unimportant, though some silver is exported. San Salvador, the capital, is the center of trade. Santa Ana, next in size, owes its prosperity to coffee and sugar planting. San Miguel is a trading center. San Vincente has fairs at which many commodities are exchanged. Most of the exports are shipped through La Libertad and Acajutla, though La Union, on the Gulf of Fonseca, has the best harbor. Coffee, indigo, sugar, tobacco, and silver are the principal exports; textiles, hardware, flour and firearms are the chief imports. Normally about half the imports come from England; the United States, Germany and France following; the exports to these countries are about two-thirds of the total trade.

Consular invoices are required in quadruplicate and must be accompanied by marine insurance certificates.

Spanish bills of lading must be certified by the Consul. Goods may be consigned "direct" or "to order."

Firearms, cartridges, etc., may be shipped without consular permission, excepting army rifles, ammunition, etc., in large quantities.

#### **HONDURAS**

Amapala.

Ports: Amapala. United Sates Consulates at Ceiba, Bonacco, Roatan, Tela, Puerto Cortes, San Pedro Sula, Tegucigalpa, Amapala, San Juancito.

Area: 46,250 square miles.
Population: 650,000 (1916), 12 persons per square mile.
Imports: Machinery, food stuffs, boots and shoes, manufactures of cotton. Total for 1917, \$6,293,068.

Exports: Animal products, mineral products, bananas, cocoanuts, coffee, gold and silver cyanides, cattle, rubber, mahogany. Total for 1917, \$8,030,177.

Honduras is the third largest of the Central American republics. The country is mountainous throughout with large, fertile valleys and plateaus which produce nearly all tropical crops. The forests contain several varieties of cabinet and other woods of which mahogany is the most important. The principal and only port on the Pacific is Amapala reached by vessels sailing from San Francisco via Panama.

Four copies of consular invoice in Spanish; even when shipped to the same consignee there must be a separate invoice for each different mark. A commercial invoice, certified by consul, must be forwarded to consignee for presentation at custom house when taking delivery of the goods. (See fac-simile).

The Consul General of Honduras is now Ingeniero Andres Soriano, 31 Broadway, New York. A charge of \$1.00 is now made for certification of the bills of lading. An entire change has been made on Consular Invoice. Goods may be consigned "direct" or "to order".

Firearms, cartridges, etc., may be shipped without permission of Consul. The consignee, however, must obtain a special permit to import such goods.

The importation of ordinary intoxicating liquors is pro-

hibited. Whiskey, cognac, rum, aniseed and gin are considered ordinary when put up in casks, barrels, kegs or

## Fac-Simile

## CONSULAR INVOICE, HONDURAS (REPUBLIC OF)

en la Repr	of Merch	andise ship	oped by Capitan Captain y consigna	das a	o pw w	f ue zarpara hich sailed poi	el	i 	n the Stea lestinadas lestined fo	mer al puerto d r the port o	e of
Marcas y Contra- marcas Marks and Counter- marks	Numero de buitos Number of Packages	Numero de cada bulto Number of each Package	Clase de bultos Kind of Package	Peso Brut Bulto e Gross W Each Pkg En Letras In Writing	n Kilos eight of	Peso total de los bultos  Total Weight of the Packages	Nombre y Clase de las Mer- caderias Name and Kind of Mer- chandise	Peso Neto de las Mismas Net Weight of Same	Potencia Alcoholica de Vinos y Licores Alcoholic Proof of Wines & Liquors	Lugar de Procedencia Origin of Goods	Valor Value

.....declara bajo juramento que la factura que precede, consta de....folio..., comprende... hulto con peso en junto de.... kilogramos y valor total de.... que la marca y numero de cada bulto, el peso y contenido de las mismos y el precio con que aparecen, es el que tienen los bultos remitidos y con el que figuran en nuestros libros, y que la suma por que van asegurados es de ....y declara, adeamas, que esta bien impuesto de la reponsabilidad y de la sancion penal a que, por cualquier inexactitud comprobada y con tendencia a defraudar los intereses fiscales o comerciales queda sujeta la firma que

Sumas Summary

New York......de .....de .........de 19... s; **\$**...... Fees Derechos; \$...

No......CERTIFICO: que la factura que precede me fue presentada por....; que la firma al pie de la declaracion que antecede, es autentica, y que los remitentes ejercen el comercio en . . . New York . . . . de . . . . de 19 . . . .

......Consul General de Honduras.

## TRANSLATION

I hereby declare under oath that the above invoice consists of .... sheets comprising package with a total weight of ....

kilograms and of a total value of . . . . that the mark and number on each package, the weight and contents of same, and the price shown are those representing the goods shipped and as entered in our accounts, and that the amount for which they

have been insured is . . . . and I furthermore declare that I hold myself responsible under the penal laws for any inaccuracies of intention to defraud the fiscal or commercial interest of the government, and I hereby sign for the firm I represent.

I certify that the above invoice was presented by . . . that the signature at the foot of the preceding declaration is authentic and that the shippers are engaged in business in



demijohns. They are also considered ordinary when put up in bottles containing less than 21 degrees Carthier of alcoholic strength, or when, in their countries of origin, the price is less than \$1 (gold) a liter or 70 cents (gold) a bottle, or if their selling price does not exceed 60 per cent of that of brandy and other liquors on which there is a government monopoly.

Honduras, though rich in resources, has little commercial development. The country has a large Atlantic and very small Pacific frontage. Its large extent and sparse population make it difficult to secure sufficient labor. Fully half of the land, lacking population and transport, is still a virgin waste

The agricultural products scarcely met the local demand until recent years, when it was found that bananas, cocoanuts and other fruit might profitably be exported from the Bay Islands and the north coast to the United States. A single schooner was in this trade in 1883, while today several steamers carry a large amount of fruit to the United States every year. The success of the fruit trade has stimulated the opening of coffee and other planta-

testimonio de lo cual firmo y pongo el sello del Consulado a

Concul General.

este documento en sextuplicado.

tions. Many hides and cattle are exported. The Atlantic forests abound with fine timber, Honduras mahogany being especially famous. The country is rich in gold and eilver, which are the leading exports cattle, tobacco, and coffee are other important exports. The imports include cotton goods and hardware, more than half the entire trade being with the United States.

## **NICARAGUA**

Ports: Corinto, San Juan del Sur. United States Consulates at Bluefields, Corinto, Matagalpa, San Juan del Sur.

Area: 49,200 square miles.

Population: (1910) 600,000; 12.2 persons per square

Capital: Managua, population, 40,000.

Imports: Machinery, flour, boots and shoes, fine leathers, kerosene, soap, textiles, rice. Total for 1917, \$6,393,068.

Exports: Coffee, hides, rubber, minerals, woods, bananas, sugar. Total for 1917, \$5,975,256.

## FAC-SIMILE OF CONSULAR INVOICE FOR NICARAGUA REPUBLICA DE NICARAGUA

Consulado General de Nueva York Numero total de bultos..... Pagina 1...... Total number of packages Page Total de paginas Peso bruto total Total number of pages Total gross weight FACTURA CONSULAR No. CONSULAR INVOICE No. (two pages) Fecha..... Date Factura de mercaderias embarcadas por..... Invoice of merchandise shipped by de......por el vapor..... de..... of Esta factura corresponde al conocimiento de embarque No...... This invoice corresponds to bill of lading No. Descripcion de las mercaderias. Nombre, materia Valor de los differentes Peso Bruto Kilos Peso Neto Kilos Marcas Numeros Numero de Clase de Bultos y cantidad de los articulos en terminos de unidades o medidas comerciales. articulos Description of the merchandise. Name, material and quantity of the articles in terms of commercial units or measures. Gross Net Marks Numbers Number of weight Kilos weight Kilos Container Packages **DECLARATION** DECLARACION The undersigned shippers of the merchandise described in Los suscritos, remitentes de las mercaderias descritas en this invoice, declare under oath that the prices, weights and esta factura, declaran bajo juramento que los precios, penos y other details of said merchandise, and other particulars stated otros detalles de dichas mercaderias, y demas particulares in this invoice, are true and correct. expresados en esta factura, son verdaderos y correctos. \_..... ...... Por..... CERTIFICATION CERTIFICACION I certify that this invoice has been presented to this Con-Certifico que esta factura ha sido presentada a este Consulado y que la anterior declaración ha sido firmida por los remitentes o su representate debidamente autorizado. En sulate and that the preceding declaration has been signed by the shippers or their duly authorized representative. In witness whereof I sign and affix the seal of the Consulate.



Consul General.

Means of Approach: To the west by steamers from both south and north to Corinto, the chief port, and thence to

Managua, the capital, by railroad, a distance of 90 miles.
Six copies of consular invoices in Spanish and commercial invoice also in Spanish are required. Not more than 10 different kinds of goods must be packed in one case. Each different mark must have its own invoice. (See fac-simile.)

Nicaragua's resources are but little developed. The east is covered with great forests. Civilization, centered on the Pacific Coast, does not extend more than 100 miles in-land. Coffee, the principal product, is grown around land. Coffee, the principal product, is grown around Leon, Granada and Managua, where nearly the whole product is raised. Large areas near the east coast are adapted for the banana, but the only plantations are along the Rama (Bluefields) river, which alone provides a highway to the sea, the river being navigable by steamers for 65 miles. The forest wealth is little developed. Wild rubber plants, however, have been so recklessly destroyed that the exportation of rubber, except from plantations, was prohibited for several years. Many cattle graze on the northwest plateau, and hides are an important export.

Greytown and Bluefield are the Atlantic ports, but Greytown is no longer accessible for large yessels. Corinto and

town is no longer accessible for large vessels. Corinto and San Juan del Sur are the Pacific Coast ports, most of the trade passing through Corinto, which is better protected and is connected by rail with the large interior towns, Granada, Masaya, Leon, and Chinandega. As the settled part of the country is almost inaccessible from the Atlantic coast, the trade passes between Corinto and the Isthmus of Panama.

The principal exports are coffee, gums, hides, timber, bananas and cattle. Normally the United States takes about half of the exports, followed by Great Britain, Germany and France. Most of the imports, textiles, hard-ware, flour and other articles come from the United States and England.

## **PANAMA**

Ports: Balboa.

Area: 32,380 sq. mi.
Population: (Estimated) 341,090.
Exports: (1917) \$5,624,176.
Imports: (1917) \$9,223,170.

Principal Exports: Bananas, rubber, cocoanuts, manganese, ivory nuts, cocobola wood, tortoise shell, mother-of-pearl and hides and skins.

Principal Imports: Flour, rice, potatoes, sugar, textiles, meats, boots and shoes, structural iron and steel, railway material, lumber, tobacco, pharmaceutical products, machinery, petroleum and gasoline.

Means of approach: To the west coast by steamers from both south and north to Balboa, the Pacific port of the Canal Zone, and thence to Panama, the capital, by railroad 3 miles long.

United States Consulates at Colon and Panama.

Six copies of consular invoice in Spanish, five for the consul, are required. Four copies of bills of lad-ing must be certified by consul before presentation to steamship company for signature. (See facsimile.)

Harbor: Balboa, Canal Zone, is the port of entry for all sea-going ships bringing cargo for the city of Panama and the Pacific end of the Canal Zone. Panama Harbor affords accommodation for light draft vessels engaged in the coastwise traffic, but lacks the proper facilities.

Anchorage: Balboa, off the islands of Naos, Flamenco and Porico, where steamers await visit of quarantine officer before proceeding through the canal or to the docks. Depth of water at anchorage, 40 feet at low tide. Average tide 18 feet. Bottom muddy.

Docks: Owned by the Panama Railroad Co., now in use for local cargo. Steel and wood, 1,500 feet long with approximate depth of water 35 feet alongside. New steel and concrete docks just completed, 1,000 feet long. All freight landed at Balboa is subject to a charge of \$1.25 per ton, which includes wharfage, and transportation to Panama City.

Charges on Shipping: Pilotage—No charge for canal transit. Harbor pilotage to docks for loading or discharging cargo or taking coal and other supplies, \$1 U. S. currency per foot draft. Wharfage—15c per lineal foot per day for steam or power driven vessels. American clearance and bill of health, no charge. Bills of health for other countries, charges vary from \$2.50 in the case of Guatemala to \$18 for Chile. Water, 50c per 1,000 gallons; minimum charge is \$3. Provisions supplied by the Panama Canal at New York prices.

(PANAMA)
Vapor
and destined for  Total en balboas u oro Americano \$

Net value Total, in balboas or American gold Derecho consular cobrado \$..... Consular fees collected

			Clase de	Peso Neto	Litraie	Peso Bruto en Kilos	Pormenor de las clases de articulos		Original al Price
Marca Mark	Numeracion Number	Cantidad Quantity	Bultos Kind of Packages	en Kilos Net Weight in Kilos	Liquid Measure	Gross Weight in Kilos	contenidos Description of Contents of Packages	Parcial Rate	Total Total
						·	(Invoices must be itemized and detailed in the same manner as on the commercial invoices rendered to the consignees of the merchandise.)		

Conste que queda garantizado bajo juramento, con la firma puesta al pie de esta declaracion, la verdad y exactitud del detalle al respaldo; así como que en este embarque no se han incluido mercancias correspondientes a expediciones o a pedidos de otras personas, y que esta la casa remit ente enterada de la legislacion penal aplicable en casos de discre pancias en este documento.

I hereby declare under oath by the signature at the foot of this declaration, the truth and exactness of the details in this invoice; also that this shipment does not include merchandise belonging to shippers or other persons, and that the firm I represent is responsible under the penal laws for any discrepancies in this document.

Stevedoring by the Panama Railroad Co., at 30c per bill of lading ton; by private stevedoring companies, less. Lighters rented by the Panama Railroad Companies, less.

Soc per hour. Tug hire is at \$15 per hour. The Panama Railroad Co., is the only rail connection with the Atlantic Coast of the republic.

Packages shipped in may be marked with either

stencil or brush.

Goods may not be consigned to "order" or "care of." Weights must be declared on consular invoices in kilos and liquors in liters and kilos. One quart equals 0.946 of a liter.

Permission must be obtained from the Consul before shipping firearms, ammunition, etc., but sporting guns,

cartridges, etc., do not require a special permit.

There is a 15 per cent ad valorem duty on all goods except liquors, coffee, opium, matches, tobacco, salt, etc., which pay a special duty.

## **COSTA RICA**

Ports: Puntarenas.

Costa Rica has a population of 445,000, composed chiefly of the white race of Spanish descent. There are many mixed Indians and some pure Indians. The foreign population numbers several thousand. The inhabitants have no special predilections. The living standard depends upon individual means, and is not very high with most of the people. The country has an area of 18,400 square miles.

The climate varies from tropical to temperate. The coast lines are low. The chief cities are connected by

rail.

The official language is Spanish. English is understood by the larger firms. Postage from the United States is 5 cents an ounce; from Costa Rica 15 centimos for 20 grams. All customs duties are specific and include all At least 75 centimos is collected on all wrappings. parcel post packages.

Principal Imports: General merchandise, flour, dry

goods, drugs and electrical supplies.

Principal Exports: Bananas, coffee, hides, sugar and

cocoa.

The Northern Railroad connects the capital and central plateau with Port Limon on the Atlantic and "Ferroccarril al Pacifico" a government owned railroad with Punta-renas on the Pacific. These are the leading ports. Normally many steamers touch at Port Limon, including the United Fruit Company Steamers which have a present service. The Pacific Mail and Gulf Steamship Co. have a regular service with Puntarenas. Transportation off a regular service with Puntarenas. Transportation off the lines of railroads is chiefly by ox cart over bad roads. Packing should be strong but light. Tin containers should have a means of opening without destroying their usefulness against ants, etc.

Agriculture is the leading industry. There is some gold and manganese mining and lumbering done.

tories are few and small.

Usual credits; from presentation of documents to 30, 60, and 90 days of open credit. Not much cash in 30 days

and against documents.

The present economic condition is bad, exchange is very high and varying and merchants hesitate about ordering goods not essential. Stocks are getting low.

### **MEXICO**

Shipping Routes to West Coast of South America From Puget Sound: W. R. Grace & Co. From San Francisco: W. R. Grace & Co.

South Sea Navigation Co., Central American S. S. Co., Fair & Moran, Gulf Mail S. S. Co., International Shipping Co., Maple Leaf Line, Pacific Mail S. S. Co., Pacific Sunset Line, C. Henry Smith, Inc., Southwestern S. S. Co., Swayne & Hoyt Co., Inc.

Ports: Engenada Magaelan Sea Blanca

Ports: Ensenada, Mazatlan, San Blas, Manzanillo,

Acapulco, Salina Cruz.
United States Consulates at Ensenada, Mazatlan, Manzanillo, Acapulco, Salina, Cruz.

Population: (1910), 15,063,207. Area: 767,097 square miles.

Capital: Mexico City, population, 500,000.

Imports: Machinery iron and steel, textiles and manufactures, lumber, coal, corn, vegetable oils, coke, grain.

The importance of Mexican trade with the United States is seen from the following figures for the years ended June 30, 1912-1918:

	Imports	Exports
	from Mexico	to Mexico
1912	\$ 65,915,313	\$ 52,847,129
1913	77.543.842	54,383,424
1914		38,748,793
1915		34,164,447
1916		47,945,519
1917		79,004,597
1918		106.893.653

In 1913 Mexico drew 48% of its imports from the United States, and sent in exchange 76% of its exports. Exports to Mexico have trebled since 1915.

Consular invoices either in Spanish or in English are required in quadruplicate and must be sworn to before a notary registered at the consulate. A declaration of a change of steamer is required if goods are not shipped on the steamer mentioned in the consular invoice, fee \$2. Mexican customs officials impose fines for inaccuracies or omissions in consular invoices, so the utmost care must be exercised in making them out. (See fac-simile.)

Packages may be marked with stencil or brush.

Consular invoices should not be taken out by shipper when goods are sent via El Paso, Eagle Pass, Laredo or Nogales. In such cases they are taken out by the railroad companies, but the shipper must furnish the necessary information as to weights, values, etc., in the form of a "shipper's manifest."

Goods may be consigned either "direct" or "to order." Before shipping firearms or ammunition of any kind into Mexico it is advisable to inquire of the Consul whether a special permit is required. Rifles, carbines or revolvers of 7, 8 or 11 millimeters, or ammunition for same cannot be shipped.

Most of Mexico stands on a high plateau. Temperate and even frigid influences prevail in the elevated interior, though tropical heat covers the low coast lands. Altitude has therefore larger effect than latitude upon business. Nearly all the plants found between the equator and the Arctic circle grow in Mexico; the hot land along the narrow coast is a region of cotton, henequen, mahogany, logwood, and tropical fruits. Above the coastal zone, from 3,000 to 6,000 feet in elevation, are the "temperate lands," corresponding to southern Italy in vegetable products, a zone of subtropical plants, such as the cactus, on which the cochineal insect feeds, besides maize, beans, and other food plants, and tobacco. Above 6,000 feet, on the plateau proper, are the "cool lands," bordered by mountain ranges, a region of wide, natural pastures, and of wheat, barley, apples, and many other products of the cooler latitudes, with deep valleys here and there where cotton and other subtropical products are grown. Most of the inhabitants live in this central region, where agriculture and mining are chiefly carried on. The extreme north has four seasons in the year, but south of latitude 28 the seasons are divided into the wet, from May till October, and the dry, from October till May.

The structure of the land and the resulting climate present some impediments to industry and trade. Thus the Mountain ranges bordering the plateaus prevent wet winds from reaching the interior, so that most agriculture is carried on only with the aid of irrigation. As irrigation is costly, there are fewer small farms in proportion to population than in the United States; north of the City of Mexico there are vast unimproved areas almost uninhabited because capital and engineering skill have not yet led water from the mountains to fit the rich soil for tillage. Commerce must depend entirely upon the railroads, as none of the rivers are available for navigation. Access to the ports is difficult on account of the great difference in eleva-tion. Trains from Vera Cruz climb 8,000 feet to reach the City of Mexico.

The harbors on the Gulf Coast are naturally poor. But a fine harbor has been made at Vera Cruz, and large sums have been spent to make that port and Tampico available for the needs of commerce. The best ports are on the Pacific Coast, but as they are shut off by mountains from the most populous and busiest parts of the country they

have only a small share in the trade.

Most of the agricultural products are consumed at home. The wheat raised on the high table-land is somewhat inferior to that of the United States. Maize and frijole (a black bean widely grown for food throughout Latin-America) are the staple food of the people. All the cotton raised is spun in the mills; the best quality of fiber is grown in the neighborhood of Acapulco. One of the great exports is henequen (sisal fiber), used for sacking, cordage, and binder's twine. The sales to the United States are making Yucatan one of the wealthiest states in Mexico. Superior vanilla, raised on plantations mainly in the state of Vera Cruz, is also a large export. The banana thrives everywhere on the lower mountain slopes, and the home trade is a source of much profit. Oranges, lemons, tobacco, coffee, cacao, rubber, and other southern products are very successful, but have not entered largely into the world's trade. One of the important plants is maguey, the American aloe, from which pulque, the national alcoholic beverage, is made. Considering the vast extent of fertile lands in Mexico, the republic is as yet utilizing only a small part of her agricultural resources in foreign trade.

Animal raising is growing in importance. It is still, however, in the early stages of development. Many large estates or haciendas on the plateau are devoted to the raising of cattle, mostly of the long-horned Mexican type, though the stock is being improved by importations from the United States. Hides and live cattle are exported to this country. Dairy farming is profitable near the large cities, where milk and butter sell at high prices. The wool crop is coarse and inferior, so that home mills import much wool of finer grades, while well-to-do Mexicans wear imported woolen cloths. The horses are small, but hardy and spirited. The coast waters teem with fish; beds of pearl oysters in the Gulf of California supply a lucrative in-

dustry.

Forests have been recklessly wasted. Many mountain slopes have been denuded of their timber to supply the mines. Much lumber is imported mainly from the Pacific Coast of the United States. Mexico in return sells large quantities of mahogany and dyewoods to other countries.

Metals are the largest resource. Mexico is one of the richest mining countries in the world. More than half the silver has been produced on the plateaus in the three districts of Guanajuato, Zacatecas and San Luis Potosi. The Beta Madre lode of Guanajuato alone produced \$252,-000,000 between 1556 and 1903. Lead associated with silver is a large product. Gold is found for the most part not on the plateaus but on the slopes facing the Pacific, and apparently in greatest abindance near the United States border, though it exists throughout the mountains. Gold mining is still in its infancy in most of these regions. Iron ore of fine quality is in inexhaustible supply. Coal is found in various parts of the country, but comparatively little is yet mined. Mexican petroleum is refined at Tuxpan on the Gulf of Mexico. Pure sulphur from the crater of Mount Popocatepetl is exported from Puebla. Copper, mercury, and tin are also important products. As the precious metals, chiefly silver, are the larger part of the total exports, many steamers loaded with merchandise for Mexico cannot secure return loads and consequently visit United States ports for cargoes.

Mexico, as well as all Latin-America, is poor in industries. The products of these countries are chiefly raw materials; most industrial products, particularly articles of luxury and fine quality, are imported. The lack of political stability has had an important influence in preventing industrial advancement. Mexico, Argentina, and Chile have made the largest progress, Mexico in particular extending her manufactures to many branches, so that the imports are decreasing. More than 100 cotton mills consume all the home cotton, import from Texas half the cotton they spin, and supply most of the needs of the country. Over 20 woollen mills make a variety of coarse fabrics. About 3,000 sugar mills supply the local demand. Paper, porcelain, soap, beer brewing, chocolate, glass, and

drugs are among the other industries.

Railroads reach all the principal cities and the commercial and mining centers. Connections are made at several points with the United States lines, so that the City of Mexico is now easily reached from all parts of this country. The capital city is the center of the wholesale trade, much of which is in the hands of German merchants and bankers. Nearly all the industries of the country are represented in its numerous shops and factories.

Articles in greatest demand in Mexico include the following: Farm tractors and agricultural implements, delicacies, such as canned salmon, sardines, tuna fish, olives,

#### Fac-Simile

## **CONSULAR INVOICE (MEXICO)**

Form No. 7. DATE PROTEST and signature of shipper to be placed at the end of the invoice.

#### Instructions

Every package must be marked and numbered.

The number of packages must be added at the foot of each invoice in figures and writing.

Erasures, corrections and writing between lines not allowed. Any non-compliance with the foregoing instructions will subject the importers to a fine in each case.

The declarations of the "class of merchandise" should be in conformity with the vocabulary of the Mexican Custom House Tariff.

Mark of Package	No. of Each Package	Quantity of Package	Description of Packages	Gross Weight of each Package in American Pounds	Total Net Weight in American Pounds	Total Legal Weight in American Pounds	Class of Mer- chandise	Place of Manu- facture	Value in U. S. Gold

(Consular invoices consisting of more than one sheet must not be "pasted" together.)

Note.—Consular invoices should NOT be taken out by shipper when shipments are made by way of El Paso, Engle Pass, Laredo, Naco or Nogales.

We hereby swear that this invoice is correct and that we proceed with legality and good faith.

Signed by shipper.....



all kinds of fancy goods, shoes, hats, and clothing (American fashions are preferred to European ones), iron and steel products used in railroad and repair work.

The principal exports from Mexico are silver, gold, quicksilver (mercury), antimony, tin, manganese, bismuth, copper, sulphur, precious stones, petroleum, woods (ebony, black walnut, poplar, oak, redwood, steelwood, etc.), beans, vanilla, coffee, cocoa, garbanzo, broom corn, sizal, henequen. spices, rice, castor beans, hides, wool, fats, oils.

Many kinds of precious stones are found in different states and may be had in commercial quantities at extremely low prices. Opals of excellent quality may be obtained from Queretaro; garnets in Chihuahua and Sonora; sapphires and topazes in Guanajuato; obsidian in Michoacan, Jalisco and Queretaro; rubies in Guerrero, and the finest pearls in the world in Lower California. The quantity of pearls exported annually from this last mentioned state is valued at \$1,000,000 gold. These pearl grounds were in Diaz' time monopolized by an English and Spanish syndicate, but the grounds are now open to everybody.

## LATIN-AMERICAN TRADE RECORD Imports from Four Leading Countries

Countries	Total from a	all Countries	United I	Kingdom	Fra	nce	Germany		United States	1
	1913	1916	1913	1916	1913	1916	1913	1913	1916	1917
Mexico Guatemala Salvador Honduras Nicaragua Costa Rica Panama Cuba Dominican Republic Haiti	\$97,886,169 10,062,328 6,173,545 5,132,678 5,770,006 8,778,497 11,397,000 143,758,736 9,272,278 8,100,125	*\$83,500,000 8,339,294 5,823,619 4,452,109 4,777,597 6,731,273 9,197,454 248,278,279 11,664,430 10,312,000	\$12,950,047 1,650,387 1,603,846 712,750 1,150,611 1,303,187 2,465,431 16,071,787 730,191 *593,319	*\$9,000,000 1,320,994 1,338,700 *100,000 610,522 790,851 1,267,149 19,230,658 481,305 719,959	\$9,168,978 402,025 418,111 148,280 400,776 391,681 336,816 9,202,720 274,318 *817,335	186,893 316,136 *50,000 202,205 180,228 143,393 5,930,905 152,358	2,043,329 713,855 558,327 619,213 1,355,417 1,078,167 9,473,543 1,677,833	4,515,871 6,378,702 75,967,525 5,769,061	*\$60,000,000 6,535,407 3,586,508 *4,000,000 3,855,900 4,677,407 6,674,990 185,337,190 10,162,698 8,775,064	\$111,111,541 6,771,573 4,306,247 5,137,606 4,731,288 3,119,211 28,140,541 196,350,315 16,348,180 7,481,391
Central-American Republics Per Cent. of Imports.	306,331,362 100	393,076,055 100	39,231,556 12.81	34,860,138 8.87	21,561,040 7.04			161,429,181 52.70	293,605,168 74.70	383,497,893
Argentina Bolivia Brazil Chile Colombia Ecuador Paraguay Peru Uruguay Venezuela.		210,887,042 12,128,304 195,998,099 81,220,102 28,922,529 9,330,173 4,558,684 42,200,010 35,155,112 20,634,418	4,329,659 79,881,008 36,109,211 5,837,400 2,617,926 2,254,312 7,769,225 *5,500,000	*3,500,000 39,951,662 20,049,544 *7,000,000 2,388,795 1,711,303 7,272,042 7,046,889	36,933,537 802,664 31,939,752 6,623,264 4,408,600 434,740 520,985 1,363,191 *5,400,000 1,093,656	14,549,089 *500,000 10,173,293 3,462,373 *1,000,000 389,242 71,018 953,847 1,752,683 993,004		1,577,200 51,289,682 20,089,158 7,629,500 2,817,754 473,678 8,530,525 *8,000,000	61,626,397 *3,200,000 76,907,901 34,458,956 *16,000,000 5,354,270 561,229 24,866,592 8,810,669 12,958,727	107,641,905 *3,474,033 66,207,970 57,483,996 12,563,551 5,475,245 452,116 22,070,096 18,401,941 10,785,281
South-American Republics Per Cent. of Imports.	1,020,308,421 100	641,034,473 100	285,555,025 27.98	152,997,221 23.86	89,520,389 8.77	33,844,549 5.28		167,523,500 16.42	244,744,741 38.18	304,556,134
Total of the 20 Republics Per Cent. of Imports.		1,034,110,528 100			111,081,429 8.37			328,952,681 24.79	538,349,909 52.06	688,054,027

<sup>\*</sup>Estimate.

#### **Exports for Five Years**

Countries	Total to all	l Countries	United I	Kingdom	Fra	nce	Germany		United States	
	1913	1916	1913	1916	1913	1916	1913	1913	1916	1917
Mexico. Guatemala. Salvador. Honduras. Nicaragua. Costa Rica. Panama. Cuba. Dominican Republic. Haiti.	150,202,806 14,449,926 9,928,724 3,300,254 7,712,047 10,432,553 5,383,027 164,823,059 10,469,947 11,315,559	10,637,886 11,604,751 4,190,565 5,284,863 11,121,172 5,506,725 356,571,350 21,527,873	1,600,029 705,607 13,467 998,564 4,364,436 65,024 18,427,163 241,810	*32,000,000 86,087 67,253 *20,000 37,955 3,668,408 55,687 52,776,331 105,017 *1,300,000	21,268 2,030,346 *1,500 1,763,187 96,665 15,776 1,684,548 887,907	836 2,779,179 *6,000 925,744 93,418 5,000 13,030,856 287,799	1,887,698 509,804 216,937 4,707,548 2,068,384	3,923,354 2,823,851 2,869,188	*110,000,000 8,668,573 4,102,410 *3,750,000 3,730,952 6,830,977 5,360,788 250,090,418 17,412,088 *4,000,000	130,434,722 10,470,225 5,525,073 4,957,510 3,813,248 6,347,606 7,484,494 248,598,199 12,645,636 3,542,167
Central-American Republics Per Cent. of Exports.	388,017,904 100			90,116,738	15,076,706 3.88		31,338,745 8.07	276,839,773 71.34	413,946,206 67.87	433,818,880
Argentina	36,551,390 315,164,687 144,653,312 34,315,800 15,789,367	39,579,072 267,081,015 187,458,432 31,654,277 17,569,691 8,190,371 80,389,561	29,548,088 41,701,815 55,548,341 5,566,000 1,620,092 158 16,539,110 *12,500,000	154,962,642 *24,500,000 31,120,254 48,572,571 *3,000,000 3,550,071 77,624 14,394,551 13,827,770 1,386,279	36,586,981 1,783,017 38,685,561 8,847,885 797,900 5,382,352 33,068 1,566,495 *1,300,000 9,988,044	*280,000 2,171,949 126,022 480,408 12,677,241	3,109,758 44,392,410 30,772,743 3,216,200 2,627,353 1,198,685 2,966,884 *12,000,000	22,207,965 218,195 102,562,923 30,413,386 18,861,800 3,833,728 14,741,639 2,972,222 8,475,531	110,063,640 *10,500,000 125,395,019 92,033,567 *26,000,000 8,552,482 227,287 50,565,066 16,493,601 11,795,771	178,245,833 51,948 145,274,931 142,597,929 27,581,217 10,507,223 97,029 43,471,316 33,175,381 15,722,275
South-American Republics Per Cent. of Exports.	1,159,971,366 100	1,252,749,156		295,391,762 23.58			162,026,169 13.95	204,287,389 17.61	451,626,433 36.06	596,725,082
Total of the 20 Republics Per Cent. of Exports.		1,862,691,341			120,048,009 7.75	166,171,146 8.92	193,364,914 12.49	481,127,162 31.09	865,572,639 46.48	1,030,543,960

\*Estimate.

## UNITED STATES OF AMERICA

Filing Shippers' Export Declarations and Licenses

The appended joint regulations of the Secretary of the Treasury, the Secretary of Commerce, and the War Trade Board effective February 1, 1918, prescribing the procedure for filing shipper's export declarations and export licenses with collectors of customs, are published for the information of shippers and exporters.

(T. D. 37470.)

Procedure for filing shipper's export declarations and export licenses with collectors of customs prescribed jointly by the Treasury Department, the Department of Commerce, and the War Trade Board.

Washington, D. C., December 31, 1917.

To collectors of customs and others concerned:

(1) Shipper's export declarations.—During the period of the war and until further notice a new single sheet form of shipper's export declaration, customs Cat. No. 7525, must be filed with the collector of customs at the port of exportation for all goods exported on and after February 1, 1918. The shipper will prepare this declaration in quadruplicate for all exports to foreign countries and in duplicate for all shipments between the United States and its non-contiguous territory.

For exports to a foreign destination the shipper will present all four copies, fully filled out and signed, to the collector of customs, but will make oath upon the original copy only. The oath may be taken before the collector of customs, notary public, or other person authorized to administer oaths.

The War Trade Board export license must be presented to the collector with the declarations covering the shipment, and the collector will compare the license with the four copies to see that they agree in all particulars. If all documents are in proper form the collector will retain the original declaration and one copy and deliver two copies to the shipper.

(2) The shipper will deliver one copy to the steamship company and send the other copy with the goods to the customs inspector on the dock, without which merchandise will not be received.

The inspector of customs will note upon his copy the facts of lading, short shipments, etc., and deliver it to the representative of the vessel, to be attached to the manifest of the vessel when presented at the customhouse for clearance.

(3) The copy delivered by the shipper to the steamship company must accompany the goods to their foreign destination, to be delivered to the American consular officer at the port of discharge with copies of the manifest, and the master's oath and agreement made at time of clearance. (W. T. B. bunker Form B-7.)

If the consular officer has cause to believe that there has been any conduct contrary to the intent and purport of such manifest and affidavit he will forward the copies thereof to the War Trade Board, Washington, D. C., with a full report, stating his grounds for such belief, otherwise he will retain said copies in his files.

(4) The manifest of the vessel must cover all goods on board and show for each shipment the custom-house number of the export declaration. The oath and agreement of the master made at the time of clearance must be attached to the manifest. (W. T. B. bunker Form B-7.)

After clearance the collector of customs will compare the two copies of the export declaration on file in his office with the inspector's copy attached to the manifest and note upon both retained copies any short shipments or other variations. The original copy of the export declaration with the shipper's oath and notations of short shipment will be transmitted immediately by the collector of customs to the Bureau of Customs Statistics, at New York. The second copy, with like notations, will be forwarded by the collector to the War Trade Board, Washington D. C.

(5) Short shipments.—When the balance of a short shipment noted on the export declaration is ready to go forward the shipper will prepare a new declaration marked "short shipment declaration," showing the number of the original declaration, which will take the same procedure as outlined above.

(6) Shipments in bond.—The affidavits required under the espionage and trading with the enemy acts are necessary for all shipments to foreign countries, and the new form of export declaration with said affidavits thereon must be furnished in the manner prescribed above for all withdrawals from warehouse for exportation and other shipments under bond, except in transit.

Export declarations will not be required on foreign merchandise shipped in transit through the United States from one foreign country to another. In the case of these "in transit" shipments an additional copy of the carrier's manifest, customs Cat. No. 7512, will be furnished by the shipper, with the export license number and date of expiration, if covered by license noted thereon. This additional copy will be forwarded by the collector at the port of exportation to the War Trade Board, Washington, D. C.

(7) War Trade Board export license.—Only one copy of the export license will be issued by the war Trade Board, which will be sent to the applicant or his nominee and which must be presented to the collector of customs with the export declarations covering the shipment. When the shipment embraces all of the goods covered by the license it will be retained by the collector of customs and forwarded to the War Trade Board, Washington, D. C., with the copy of the export declaration. In the case of short shipments the export license will be retained by the collector until the balance has been exported or until the license has expired.

(8) Partial shipments on export licenses.—When the shipper intends to export goods covered by one license in several partial shipments he will give notice of such intent in the space provided on the back of the license. The export declarations for the first partial shipment being presented to the collector of customs, together with the license, he will compare them, and if they agree countersign the notice of intent. The license will be returned to the shipper for use in subsequent shipments, in each of which the same procedure will be followed. When the final shipment has been made the collector will retain the license and forward it, attached to the last declaration indorsed by him with the words "Final shipment," to the War Trade Board at Washington, D. C.

For partial shipments the same license may be used at each port of shipment. When, however, shipments are intended to be made simultaneously at different ports the shipper may request the collector of customs most convenient to him to issue a certificate for partial shipment to be used at another port. The collector of customs, after seeing that the amount of such shipment is noted upon the back of the license presented to him will approve the application and forward it to the collector at the port where it is to be used. When the goods have been exported from the latter port, the collector of customs will indorse the fact of shipment, shortages, etc, if any, upon the back of the certificate and return it to the collector of issue.

- (9) Return of unused licenses.—When a license is not used, either in whole or part, the shipper will indorse upon the back of the license the reason for non-use and will return it to the War Trade Board, Washington, D. C.
- (10) Repeal of previous regulations—The provisions of T. D. 35969 and other regulations issued which are inconsistent with the foregoing procedure are suspended during the period of the war and until further notice.

W. G. McAdoo,
Secretary of the Treasury.
William C. Redfield,
Secretary of Commerce.
Vance C. McCormick,
War Trade Board.

#### **OREGON**

Ports: Portland, Astoria, North Bend, Marshfield.
Ouarantine

There shall be appointed by the governor, and removed at pleasure a health officer to reside at the port of Astoria \* \* whose duty it shall be to board and take charge of every ship and vessel arriving from the sea which shall have on board any persons or goods infected with small-pox, cholera, leprosy, or other contagious diseases, or which shall have had on board any such infection during the voyage, or which shall be in such condition by reason of the bad health of the people on board, or the filthiness of the ship, or the decaying state of the cargo, as to endanger the health of the inhabitants of this state.

Every pilot who shall bring into said port any ship or vessel in bad sanitary condition, or which he suspects may be capable of propagating disease, shall anchor such ship or vessel below Smith's Point, and give immediate

notice to the health officer.

When the health officer shall board a ship or vessel to investigate her sanitary condition, he shall raise a red flag at the mainmast, which will suspend all intercourse with the shore, except by permission of the health officer. He shall then proceed by personal inspection, and by the examination of mitnesses are the triangle of mitnesses. examination of witnesses sworn by him, to ascertain if there be cause for her detention, and if not, he shall give to the master a certificate to that effect, and strike his flag; but if he shall find on board the ship any case of contagious disease, or that the ship's people or cargo are infected with such disease, or if, for any reason, he shall believe that she is likely to propagate disease if allowed to go into port, he shall cause the ship to be anchored at a safe and convenient place, to be designated by him, and to be subjected to such cleansing and renovation and her cargo and hold to such ventilation and other treatment, as he shall think necessary for their purification; and he shall cause such of the people as are sick or infected to be subjected to such sanitary treatment on the ship or shore, as he shall think necessary for their speedy recovery; and the reasonable and necessary expenses of such treatment shall be borne by the persons treated, or by the ship, if they shall make default; and when he shall deem it safe to do so, he shall give to the master a certificate of health, and strike his flag.

It shall be the duty of the health officer, during all the time that any ship may be under his flag, to give all his time and care to such ship and her people, without charge

for professional or other service.

There shall likewise be appointed a health officer to reside at Coos Bay, and one to reside at Gardiner, near the mouth of the Umpqua river, and one to reside at Yaquina City, near the mouth of Yaquina Bay, \* \* whose duties and liabilities shall be the same as are prescribed by this chapter for the health officer at Astoria.

#### Pilotage

Columbia River Bar and Columbia and Willamette

Any person who pilots any vessel upon or over the bar or river pilot grounds, not being then a licensed pilot therefor, nor the master or owner thereof, or any pilot who shall demand or receive any greater compensation for piloting a vessel over or upon either of said grounds than is allowed by law, is guilty of a misdemeanor, \* \* \*

The bar pilotage ground shall be deemed to extend from the uppermost dock or wharf at the port of Astoria or Knappton to the open sea at least 10 miles beyond the uttermost buoy; and the river pilotage ground shall be deemed to extend from the lowermost dock or wharf at the port of Astoria to the head of navigation on the Columbia and Willamette rivers and their tributaries; and the branches or warrants issued by the board of pilot commissioners hereinafter provided for to pilots appointed by them shall define the ground covered by the pilot's authority, and the fees to which he is entitled.

A pilot on boarding a vessel, if required by the master thereof, must exhibit his license before he is authorized

to act as a pilot thereon.

A pilot licensed under this act is authorized to take charge of any seagoing vessel over 100 tons of burden, not then in charge of such a pilot, anywhere upon the pilot ground for which he is licensed, and to navigate her upon and over the same, and demand and receive therefor the compensation allowed by law.

In the following cases a vessel is exempt from compulsory pilotage, and is not required to pay a pilot unless one is actually employed:

1. A vessel engaged in the whaling or fishing trade.
2. A vessel licensed and engaged exclusively in the coasting trade between any port in Oregon and any port on the

Pacific Coast.

The compensation allowed for piloting a vessel upon or over the bar pilot grounds shall be as follows: For piloting an inward or outward bound vessel to or from Astoria, over the bar, or from within the bar to the open sea, all vessels shall pay \$5 per foot draft, and 2 cents per ton for each and every ton registered measurement

from within the bar.

The compensation allowed for piloting a vessel upon the river pilot ground between Astoria and Portland, whether ascending or descending, shall be \$2 per foot draft and 2 cents per ton registered measurement; and the board is authorized to prescribe a proportionate compensation for pilot services between other points on said ground; and for moving a vessel in port from one dock to another, or from one part of a dock to another part of the same dock, the charge shall be a sum not exceeding \$7.50, and the pilot on being thereunto requested by the master or person in charge of a ship shall promptly do such work for such compensation. Provided, however, that it shall be optional with the master or person in charge of any such pilot; and if the master or person in charge of any vessel declines to accept the services of a pilot upon the river pilot ground aforesaid, the vessel shall not be liable for pilotage.

The pilot who first speaks a vessel not exempt from compulsory pilotage, as provided in section 4015, or duly offers his services thereto as pilot, on or without the bar pilot grounds, is entitled to pilot such vessel over the same; but the master may decline to accept, and may navigate his vessel over said pilot grounds without a pilot, but, nevertheless, he shall, if inward bound, pay to such pilot the full amount of pilotage to which such pilot would have been entitled if his offer had been accepted and his services performed accordingly; and if outward bound,

one-half such amount.

When a vessel outward bound takes a pilot, and is thereafter prevented from going to sea on account of stress of weather, and the pilot remains therein at the request of the master, such pilot shall be entitled to compensation therefor at the rate of \$5 per day, which additional compensation and per diem shall be considered and recovered as pilotage.

A pilot on the bar grounds must speak inward bound vessels in the order of their coming to the bar, and take the first vessel spoken that desires the services of a pilot; but in case there is a vessel in immediate danger, this rule is to be regarded as not applicable, and such vessel must be spoken and taken without regard to the order of the coming, at least until she is out of the danger.

A pilot who is carried to sea by a vessel under his charge as such pilot, without justifiable cause, is entitled to compensation therefor at the rate of \$150 per month during his necessary absence from the pilot grounds, for which he may sue the master, owner, or vessel as for claims for pilotage.

In addition to the lien of the pilot upon the vessel for any sum due him for pilotage or offering to pilot the same, the master, owner, and consignee or agent are jointly and severally liable to him therefor.

#### Umpqua River

Whenever any pilot or pilots keep and maintain a boat of not less than 50 tons burden, full deck and seaworthy, at the mouth of the Umpqua, they shall be entitled to the sole pilotage on the bar of all such vessels as they shall board outside the bar; \* \*

This board of pilotage commissioners are authorized to determine all fees for pilotage, and direct all arrangements that may be necessary to promote the commerce of the

Umpqua river.

Any master of a vessel who may choose to pilot his own vessel from outside of the bar into said river after the establishment of the service required by section 4032 shall pay to the regular pilot, who shall offer his services outside of the bar, full pilotage for entering the river, and one-half pilotage on leaving the harbor without a pilot, providing one shall offer his services.

Harbor Control

If any person not acting in an official capacity shall board or attempt to board any ship or other vessel on the Willamette or Columbia rivers, not engaged in the carrying of passengers, for hire, without the consent first obtained of the captain, master or other officer in command thereof at the time, such person on conviction thereof \* \* \*, shall be fined \* \* \*, or be imprisoned \* \* \*.

If any person, whether he be an officer of a vessel or not, shall discharge the ballast of any vessel into the navigable portions or channels of any of the bays, harbors, or rivers of this state, or within the jurisdiction of this state, so as to injuriously affect such portions or channels of such bays, harbors, or rivers, or to obstruct the navigation thereof, such person upon conviction thereof, shall be

punished \* \* \*

\* \* \* The Port of Portland shall have and is hereby granted full control of the Willamette river in the harbor at the city of Portland, and of the Willamette and Columbia rivers between said harbor and the sea, with full power \* \* \* to make, establish, change, modify or abolish such rules and regulations for the use of nagivation \* \* \* of the said Willamette and Columbia rivers \* \* \* as it may deem \* \* \* necessary, \* \* \*, and the said rules and regulations so made by it, to enforce by such fines, penalties, and punishments as it \* \* \* may deem necessary;

## WASHINGTON

#### **Puget Sound**

Ports: Willapa Harbor, Grays Harbor, Olympia, Tacoma, Seattle, Everett, Bellingham, Anacortes, Port Angeles, Port Townsend.

#### Steamer Routes

The following companies have steamers running from Seattle and Tacoma:

To Europe: Blue Funnel Line, Harrison Direct Line, Royal Mail Steam Packet Co., (Frank Waterhouse & Co.) service temporarily discontinued, East Asiatic Co., Johnson Line, Fred Olsen Line.

To the Orient: O. S. K., Nippon-Yusen-Kaisha, Blue Funnel I.ine, China Mutual Steam Nav. Co., & Ocean S. S. Co., Frank Waterhouse & Co., Dollar Line, Garland Line (from Tacoma), H. F. Ostrander, Mitsui & Co., Thorndyke-Trenholme Co.

Canadian-Trans-Pacific, James Griffith & Sons, Pacific Steamship Co., Trans-Oceanic, Overseas Shipping Co., A. M. Gillespie & Co., Uchida & Co., Suzuki & Co., Norton

Lilly & Co., Struthers & Dixon, Mitsubishi & Co.

To the West Coast of South America: W. R. Grace & Co., J. Henry Smith, Fawkner & Currie Co., South American Pacific Lines.

To Siberia: Frank Waterhouse & Co., H. F. Ostrander & Co., Mitsui & Co., Russian Volunteer Fleet, Trans-Oceanic Co., Over-Seas Shipping Co., Suzuki & Co.

To Australia and New Zealand: Canadian-Australian

Line.

To Honolulu: Matson Navigation Co., American Hawaiian S. S. Co., Canadian-Australian Line.

#### United States Quarantine Regulations

Sec. 2973. The health officer shall \* \* \* require all vessels having on board any person or persons infected with smallpox, plague, pestilential or malignant fever, or other malignant, infections or contagious diseases, or who shall have been so infected during the voyage, or

having on board any goods reasonably supposed to have any infections of such disease, to perform quarantine \* \* \*.

Sec. 2974. \* \* \* that the fees of the health officer shall

be fixed by the board of health provided for in this act, but shall not exceed the sum of \$5 for each vessel boarded or examined in the day time, and \$10 in the night time, between the hours of 10 p. m. and 5 a. m., nor the sum of \$15 for fumigating a vessel, which fee \* \* \* shall see be a lien on said vessel until paid, and no vessel shall receive a bill of health or clearance until such fee is paid,

Sec. 2975. Any owner, master, supercargo, officer, seaman, consignee, or any other person who shall refuse or neglect to obey the orders and regulations of the board of health in regard to such quarantine on the purification and cleansing of such vessel shall be punished by fine \* \* \*, or by imprisonment \* \* \* or both.

Sec. 2976. Any person sick on board any such vessel may be sent on shore by said health officer, at some place appointed and limited for the purpose and shall there be maintained, provided, and cleansed by or under the direction of the health officer, at the expense of such sick or infected person, if able, otherwise at the expense of the vessel \* \* \*.

Sec. 2977. If any person shall come on shore from any vessel, infected or justly suspected of being so, subject to or performing quarantine, or shall leave the place appointed for the sick or for purification, being employed or placed there by the health officer, without permission of said officer, he or she shall be fined \* \* , or imprisoned

\* \* \*, or both.

Sec. 2978. If any person shall, without permission of the health officer, go on board any vessel ordered for or performing quarantine, or go within the limits appointed by the health officer for the reception of infected persons and property on shore, he or she shall be considered as infected, and shall be held to undergo purification in the same manner and under the same regulations and penalties as those who are performing quarantine, and shall remain there at his or her own expense until discharged by the health officer, \* \* \*.

Sec. 2979. A red flag, at least six feet long and four

feet wide, shall be hoisted from sunrise to sunset at the main truck of any and all vessels ordered for and performing quarantine, \* \* \*.

Sec. 2980. If any master, owner, supercargo, officer, seaman, or consignee of any vessel, or any other person knowing such vessel to be subject to quarantine, shall bring or suffer the same to be brought to or near the wharf, store, or dwelling house, or other building not in use for the purpose of the health officer in his official capacity as such, or shall make any false declaration as to the port or place from which such vessel came, or in regard to the condition and health of any person on board any such vessel, or shall cause, aid or permit the landing of any person or property, of any nature or kind whatever, from

such vessel without the permission of the health officer, he shall be punished \* \* \*.

Sec. 2982. The master of every vessel arriving at any port in any county in the State of Washington, or at any port in the waters bordering on said State, having on board any person infected with plague, smallpox, or other malignant infectious, or pestilential disease, or who have malignant infectious, or pestilential disease, or who have been so infected during the voyage, or having on board any goods which may reasonably be supposed to have any infection of such disease, shall forthwith give notice thereof to the health officer; if any such master or other person having charge of such vessel shall neglect to give such notice, he shall be fined \* \* \*, or may be imprisoned \* \* \*, or both.

Sec. 3001. If any master, seaman, or passenger of any vessel \* \* refuses to answer, on oath, such questions as are asked him relating to such infection or disease by

as are asked him relating to such infection or disease, by the municipal health officer of the town or city to which such vessel comes, \* \* \* he shall forfeit not exceeding \$200, or be imprisoned not more than six months.

Sec. 3002. When a vessel or steamer arrives at any seaport in this State, having on board any person, infected with any malignant disease, the master, commander, or pilot thereof shall anchor it at some convenient place below the town or city of such seaport, at a distance safe for

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the inhabitants thereof and the persons on board other vessels or steamers in the port; and no person or thing on board shall be brought on shore until the municipal or health officers give them written permit so to do.

Sec. 3004. The municipal health officers of any seaport town or city may cause any vessel or steamer arriving there to perform quarantine at such place and under such regulations as they may judge expedient, when they think the safety of the inhabitants requires it; and whoever neglects or refuses to obey such orders and regulations shall forfeit not exceeding \$500, or be imprisoned not exceeding six months.

Sec. 3005. When such officers of a seaport town or city think it necessary to order all vessels or steamers, arriving there from any particular port or ports, to perform quarantine, they shall give notice thereof to the pilots of their port, who shall make it known to the master or commander of all vessels or steamers which they board \* \* \*.

Sec. 3007. The municipal or health officer of any seaport town or city requiring vessels or steamers to perform quarantine shall provide, at the expense of such town or city, a suitable number of red flags, at least three yards in length; and the master or commander of every vessel or steamer ordered to perform quarantine shall cause one of them to be continually kept, during the term thereof, at the head of the mainmast of his vessel or steamer and no person shall go on board such vessel or steamer during said term unless by permission of said officers, \* \* \*

Sec. 3009. All the expenses incurred on account of any person, vessel or steamer or goods under quarantine regulations shall be paid by him or the owner of the vessel or steamer, or goods, as the case may be.

#### Pilotage on Puget Sound

- Sec. 1. That no person shall pilot on Puget Sound waters unless he shall hold a pilot's license from the United States government for Puget Sound waters, and that he shall not pilot a vessel of any greater tonnage than his license provides and must have had at least one year's experience as pilot over sea or coasting vessels of at least 1,500 gross tons.
- Sec. 2. Each vessel, its tackle, apparel and furniture, and the master and the owner thereof, are jointly and severally liable for the compensation of any pilot employed for such vessel; and such pilot shall have a lien upon such vessel, her tackle, apparel and furniture, for such compensation.
- Sec. 3. Nothing in this act shall be construed to compel any vessel to employ a pilot; but no pilot shall be employed by any such vessel for the waters aforesaid except one licensed under the provisions of this act. The master of any vessel subject to the provisions of this act who knowingly employs any person to act as pilot in such waters who is not so licensed shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$200 and not more than \$500, and shall be imprisoned in the county jail of the county wherein he is so convicted until said fine, and the costs of prosecution, are paid.
- Sec. 4. Any person who has not been licensed as provided in this act, or whose license is then suspended or has been revoked, who shall offer or undertake to pilot, or shall pilot, any vessel subject to the provisions of this act, upon any of the waters of Puget Sound, its bays, harbors or inlets, shall be guilty of a misdemeanor, and shall upon conviction thereof be punished by a fine of not less than \$200, and not more than \$500, and shall be imprisoned in the county jail of the county wherein he is so convicted until said fine, and the costs of his prosecution, are paid.
- Sec. 5. That vessels regularly in the coasting trade between ports of the United States or between such ports and ports in Alaska, whether such vessels touch at a British Columbia port or not, and pilots of such vessels while engaged thereon, are exempt from the provisions of this act.

## **CANADA**

Ports: New Westminster, Vancouver, Port Mann, Victoria, Prince Rupert.

#### Steamer Routes

The following lines run from Vancouver and Victoria, B. C.:

To Europe: Alfred Holt, Harrison Direct Line.

To Australia and New Zealand: Union Steamship Co. of New Zealand.

To the Orient: Canadian Pacific, Dollar Line, Frank Waterhouse & Co., N. Y. K., O. S. K., Blue Funnel Line.

To West Coast of South America: W. R. Grace & Co., Luckenbach Line (occasionally), Smith Line (of San Francisco).

To Siberia: Dollar Line, Canadian Pacific.

The total Canadian export of merchandise for the year ending September 30, 1918, amounted to \$1,363,749,580, as against \$1,381,517,976 for the preceding 12 months and \$1,031,940,004 for the year ending September 30, 1916. Imports entered for consumption for the 1918 period were placed at \$897,128,499 compared with \$1,004,290,884 for 1917 and \$695,248,705 for 1916.

Imports from the United States for the year ending September 30, 1918, were valued at \$738,040,527. Canada's exports to the United States for the same period were valued at \$420,865,838.

The record of exports to the United Kingdom for the year ending in September was \$716,270,484, while the 1916 and 1917 totals were \$670,660,901 and \$792,993,670, respectively. Imports from the United Kingdom showed a decrease from \$97,500,236 in 1917 to \$70,598,856 in 1918. While the utilization of British shipping for the trans-

While the utilization of British shipping for the transport of troops reacted unfavorably on Canada's exports to Europe during the first six months of the year, a marked increase was indicated by the September figures due, to a large extent, to the great exports to the United States.

Trade totals with Australia form the basis for interest-

Trade totals with Australia form the basis for interesting study. Imports increased from \$929,888 in 1917 to \$2,767,072 in 1918, while exports to that country advanced from \$5,868,908 in 1917 to \$11,844,103 in 1918.

The Dominion produced 758,261,700 bushels of cereals in 1918, which represents an increase of 8.5% as compared with 698,394,700 bushels in 1917, 648,797,700 bushels in 1916, and 1,068,109,850 in the phenomenal year of 1915. The following official figures show the production of the principal grains since 1915:

	Wheat	Oats	Barley
	bus.	bus.	bus.
1915	.426.746.000	523,684,400	60,699,100
1916		351.174.000	41,318,000
1917		393,570,000	51.684.000
1918		403,009,800	83,262,500
	Rye	Peas	Other
	bus.	bus.	Grains bus.
1915		3,478,850	51,107,400
1916		3,172,400	29.869,900
1917		2,786,000	33,899,000
1918		4,384,700	46,913,600
	,,	,	, ,

#### Lumber Shows Heavy Increase

Taken as a whole, British Columbia's lumber exports showed a heavy increase in 1918 over the 1917 record, although the figures would have been much greater had ships been available. Over 53,000.000 feet of lumber was sent out during the year, as against 14,083,622 feet in 1917. The distribution of the export shipments was as follows:

South America	
China	. 18,659,000
Australia	. 6,035,934
South Africa	. 7,061,523
Fiji	. 500,000
Japan	. 500,000
United States	. 2.279,000
United Kingdom	.14,022,817
Vladivostok	. 113,383

#### Increase in Salmon Pack

The British Columbia salmon pack for 1918 shows an increase of 30,642 cases over 1917, but this is because the cheaper grades of fish were canned. The pack of sockeye fell off to an alarming degree, the Fraser River only packing 32,041 cases, as compared with 133,811 cases in 1917. The following table shows the packs of all varieties for 1918 and 1917:

1917	1918
Fraser River	206,003
Skeena River	374,216
Rivers Inlet 95,302	103,155
Naas River	143,908
Vancouver Island	364,033
Outlying districts294,597	396,212

#### Canned Goods Imports

Importations of canned products during the past three years show a gradual increase as shown by the following figures of imports of canned fruits, jams, jellies, preserves, and canned vegetables for the years ending March 31, 1916, 1917, and 1918. Most of these goods are imported from the United States.

Articles—		1917	1918
Fruits Jellies, jams, and preserves	.\$251,536 208,647	\$611,225 150,417	\$677,270 36,517
Tomatoes and corn	26,659	593,006	704,234
Vegetables and beans	195,028	384,278	526,828

Total ......\$681,870 \$1,738,926 \$1,944,849

#### New Weight Standard

The inspection and sales act has established the following weights, by the bushel, by which vegetables must be sold in Canada when sold by the bushel:

Artichokes	
Beans	
Beets	
Bluegrass seed	14
Carrots	50
Castor beans	40
Clover seed	
Hemp seed	44
Onions	50
Parsnips	47
Potatoes	60
Timothy seed	
Turnips	50

Any bag of vegetables sold as such shall contain the number of Dominion standard pounds required by the law as shown herewith:

	Pounds.
Artichokes	
Beets	
Carrots	
Onions	
Parsnips	
Potatoes	
Turnips	75

#### Custom Laws: Automobiles

Automobiles may be brought into Canada, free of duty, by tourists for their own use only, subject to the following conditions: (1) The automobile must be reported on form approved in duplicate at the Custom House at the port of importation. (2) Invoice showing selling price must be produced when practicable. (3) Deposit of \$25 must be made, and a bond for double the estimated duties in approved form conditional on exportation within six months from date of bond. The deposit will be returned upon proof of exportation within six months. A permit can be obtained from a customs office for touring purposes only, under certain conditions, for a period of one week, without making a deposit. If automobile is not exported and permit surrendered to the officer granting it within one week, the automobile is liable to seizure and forfeiture, and the privileges of further permits to the same person with-

drawn. Tourists after having temporarily crossed the frontier into the United States, may re-enter Canada upon presenting permit to customs officer, provided the officer is satisfied as to identity of automobile and its outfit. Similar privileges are extended to tourists 'motorcycles entering Canada.

#### Commercial Travelers' Samples

Samples such as are carried by commercial travelers, together with the trunks and other packages containing them (except when of no "commercial value") are subject to the ordinary customs duty, but not to SPECIAL duty in addition thereto. Imported samples (not Canadian produce or manufacture) are subject to a duty at each time of importation; provided, however, that the trunks in which samples are contained may be admitted free after payment of duty on first importation, if identified to the satisfaction of the customs officer.

Note.—Silk fabrics used as commercial samples are duti-

able if larger than 6 inches by 6 inches.

#### Invoices

Commercial travelers are required to deliver to the customs officer for entry purposes an invoice or statement in detail, showing the price (wholesale) of each sample as sold for home consumption; such invoice or statement shall be attested to by the traveler, and the quantities of such samples shall be duly checked by the customs officer and proper duty paid thereon before delivery.

#### Invoices, Contents of

Every shipment must be accompanied by an invoice. Invoices must show the marks and numbers on each package, a sufficient and correct description of the goods, the quantities and values of the articles in each package, and "fair market value," also selling price to purchaser in Canada if sold before shipment, the amount of any freight prepaid on such goods and the amount of any freight allowance made by the exporter to the purchaser in Canada.

#### Invoice, Firm Bill Heads, Requirements

Exporters may use their own bill heads or invoice forms for invoice purposes, provided that such invoice forms when used for invoicing goods sold prior to shipment to Canada shall have two columns, one headed with the words "Fair market value as sold for home consumption," and the other headed "Selling price to the purchaser in Canada." With regard to goods shipped on consignment, the invoice forms must have a column headed "Fair market value as sold for home consumption." In both forms of invoices marks and numbers on packages must be shown, and they must have written, printed or stamped thereon (not pasted) the necessary certificates. The above mentioned headings may be written, printed or stamped.

#### Invoices, Goods Sold, Certificate

Where goods are sold prior to their importation into Canada a certificate signed by the exporter or by a partner, official or employee of the exporter, having a knowledge of the facts certified to, must be written, printed or stamped (not pasted) on the invoice.

#### Invoices, Values, How Stated

The values to be stated in the "home consumption" value column of invoices of goods sold by the exporter prior to shipment to Canada, are the rate values per yard, gallon, dozen, or as the case may be. Such values may be shown by stating the list price and the rate of discount, without the total value. The price and value of goods in every such case are to be stated as in condition packed ready for shipment at the time when and at the place whence the goods have been exported directly to Canada.

#### Refund, Goods Not Ordered

Where goods entered for duty and passed into hands of importer are found not to be goods ordered, Minister of Customs may order refund of duty on approved forms, provided, (a) goods are identified by customs officer at port of entry; (b) application for refund must be made to Collector of Customs at port of entry and goods entered for exportation under customs supervision within three

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months from date of import duty; (c) proof of exportation of goods must be furnished to satisfaction of Minister of Customs.

#### Special or Dumping Duty

In the case of articles exported to Canada of a class or kind made in Canada, if the export or selling price to an importer in Canada be less than the fair market value of the same article when sold for home consumption in the usual and ordinary course in the country whence exported to Canada at the time of its exportation to Canada, there shall in addition to the duties otherwise established be levied, collected and paid on such article on its importation into Canada, a special duty (or dumping duty) equal to the difference between the selling price of the article for export and the fair market value thereof for home consumption, and such special duty shall be levied, collected and paid on such articles, although it is not otherwise dutiable. But such special duty shall not in any case exceed 15 per cent ad valorem.

#### Tourist Outfits

Tourists may bring into Canada guns, fishing rods, canoes, tents, camp equipment, cooking utensils, musical instruments, kodaks, etc., free of duty for their own use; and not for sale or hire, provided a deposit be made with the Customs Officer at port of entry, equivalent to the duty on such articles, which deposit will be returned on proof of exportation within six months from time of entry. Articles must be identified at the Customs port where reported inwards.

#### Travelers' Baggage, Duty On

Merchandise for sale, when brought into Canada as baggage, is subject to duty and to entry at the Customs House, in the same manner as goods imported by freight or express. Wearing apparel, articles of personal adornment, toilet articles and similar personal effects of persons arriving in Canada may be passed free, without entry at Customs, as travelers' baggage, under the provisions of the Customs Tariff, but the provision shall only include such articles as actually accompany and are in the use of and as are necessary and appropriate for the wear and use of such persons for the immediate purpose of the journey and present comfort and convenience, and shall not be held to apply to merchandise or articles intended for other person or for sale. Up to 40 cigars and 100 cigarettes in open packages found in baggage of traveler now resident in Canada may be admitted free of duty.

#### Fees for Ships

For and in respect of all ships entering a port to which this part applies, and at which a harbor master is appointed, and discharging or taking in cargo ballast, stores, wood or water, there shall be paid as fees:

(a) For every ship of 50 tons or under, 50 cents; (b) for every ship over 50 tons and not over 100 tons

register, \$1:

(c) for every ship over 100 tons and not over 200 tons register, \$1.50; (d) for every ship over 200 tons and not over 300 tons

register, \$2: (e) for every ship over 300 tons and not over 400 tons

register, \$2.50: (f) for every ship over 400 tons and not over 500 tons

register, \$3; (g) for every ship over 500 tons and not over 700 tons

register, \$4;

(h) for every ship over 700 tons register, \$5. Such fees shall not be payable for any ship more than twice in each calendar year, whatever is the number of ports at which she arrives or through which she passes, or the number of times of her arriving or passing; and shall be payable by the master of the ship to the harbor master immediately on her entering or arriving at the first and second ports where there is a harbor master; and the Collector or principal officer of Customs thereat shall not grant any clearance, transire or let-pass to any ship on which they are payable, until the master thereof produces to him a certificate of the payment of such fees or certificates of the payment of fees under this part, once or twice within the then current year, as the case requires.

## **ALASKA**

Nome, St. Michael, Unalaska, Anchorage, Seward, Valdez, Cordova, Skagway, Juneau, Ketchikan.

Routes: For steamer routes to Alaska see under each Alaska port and British Columbia and Puget Sound ports. For particulars regarding the individual transportation companies consult general index.

(By Kenneth C. Kerr, Editor Railway and Marine News, Seattle, Wash.)

A most important factor in the future commerce of the Pacific is the territory of Alaska. This vast region, representing an area of nearly 600,000 square miles and rich in natural resources and industrial possibilities has, in the past, been so generally misunderstood that it is deemed necessary to treat the country and its coast line in detail for the benefit of those who wish to gather a definite idea of the entire region.

Owing to the immensity of the country and largely due to the fact that its northern sections reach into the Arctic, the general impression among mariners and shippers, who have not an intimate knowledge of the country, is to the effect that it is a snowbound region abounding in ice-locked rivers and harbors. Nothing could be farther from the truth. Briefly summed up, all the harbors of Alaska are open throughout the entire year with the exception of Anchorage and those in the Bering Sea, principally Nome and St. Michael. That is to say, every port in Alaska from Ketchikan to Dutch Harbor is open continuously, and eight separate and distinct steamship companies operate to various ports, winter and summer, and the three principal railroads operate all winter.

In Bering Sea the ice pack from the Arctic and Bering Strait completely closes those remote sections to all navi-The same is true of the entire stretch of the Yukon. Navigation to Bering Sea and on the Yukon river is only open from June 1 to November 1, inclusive. But all the ocean ports of the Alaska Peninsula, Southern Alaska and Southeastern Alaska maintain open ports throughout the year and no ice at any time forms in any of the harbors.

The United States has in operation 303 miles of its proposed railroad line from Seward to the coal fields and to the Yukon River. It is the intention to develop the mines in the Matanuska field and deliver coal to Seward, where the product can be distributed throughout the North Pacific coast. Strange as it may seem, any point suitable in Alaska, from Seward or Cordova, southwesterly to Dutch Harbor from the Alaska Peninsula, could be utilized to great advantage as a coaling station for trans-Pacific ships. All the steamships plying between ports of the United States or Canada and Yokohama use the Great Circle route, which is the shortest and which takes the ship in sight of the Alaska Peninsula.

Owing to the fact that Dutch Harbor is 1,727 miles from Seattle the importance of its location as a commercial coaling station can at once be understood. Steamships in either direction can leave port with half their present coal supply, thereby increasing cargo space. Dutch Harbor being directly on the shortest route to and from the Orient, is a more accessible and convenient spot for an immense coaling plant and will not cause any delay or inconvenience.

Individually the output of salmon and halibut from Alaska represents figures greater than the total of any other country or fishing section already in operation. Throughout the southern coast are immense fishing and cold storage plants. At present the product is brought to Seattle for transshipment, but under the new order of things a complete establishment for the handling and shipping of canned and fresh fish will be established at some convenient point which will likewise be accessible to ships plying between Seattle and the Orient.

Any amount of space might be taken up in describing the wonderful natural resources of Alaska, but it is not necessary to go into detail. Suffice to say that the construction of the government railroad will open up a vast area of the interior susceptible to great agricultural development, and, as the whole country is heavily mineralized and parts

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or it well supplied with timber, mining and saw mills, towns are sure to spring up and the population of the country will be visibly increased with each passing year. Already in operation in the territory are several railroads, most of them having been built for the development of local sections or for some specific industrial purpose. In Southeastern Alaska, often referred to as the panhandle section, the mineral, fishing and industrial development for several years past has been quite remarkable.

For each year the value of the commerce of Alaska, representing the output of mineral, fish, timber, furs and miscellaneous products, combined with the value of supplies and machinery sent into the territory, exceeds a total of \$110,000,000. For the year 1918 the total reached \$127,000,000, a decrease under the 1917 total, due to the war and labor conditions, on account of high prices prevailing. With the continued development by various companies and by the government, these figures should show a steady increase with each passing year.

No country in the world presents such attractive opportunities for the sportsman as does the entire territory of Alaska. The game ranges from the polar bear, walrus. kodiak bear, moose and big horn down to small goats and sheep, foxes and various other animals. The interior streams produce trout, grayling and many small fish, while the sea abounds in seal, salmon, halibut and various other members of the tribes that inhabit the deep.

Special features of Alaska travel are the summer steamship tours which can be made at any time between June 15 and August 15. There is an average of a sailing every twenty-four hours from Seattle and the passenger has the choice of several routes. The round trip rates, including berth and meals, range from \$44 to \$225, according to route selected. These tourist trips include Inside Passage, Seattle to Skagway, including 1,000 miles of the most remarkable marine and mountain scenery to be found anywhere in the world; across the Gulf of Alaska into Prince William Sound; up the Copper River Valley and out in the Pacific Ocean to the Aleutian Islands and north to Bering Sea. Still another trip is from Seattle to Skagway, thence over the White Pass and down the entire length of the Yukon River, coming out at St. Michael and returning to Seattle by Bering Sea and the Aleutian Islands. Alaska is well served by transportation companies. Operating from Seattle there are seven regularly organized and operating steamship companies. These companies had a total of 387 sailings for different Alaska ports during the calendar year 1913. Another company operates on the Southeastern Alaska run from Vancouver, B. C., with a sailing each week. As before stated, steamships to all populous ports of Southeastern Alaska are maintained winter and summer alike, although the extra tourist travel calls for additional ships during the tourist season.

For commercial reference Alaska should be divided into five different routes as follows:

Southeastern Alaska.—The principal ports of call are Metlakahtla, Ketchikan, Petersburg, Wrangell, Treadwell, Douglas, Juneau, Thane, Haines, and Skagway. Public wharves are maintained at all of the above named except Treadwell and Thane, which are privately owned wharves for mine companies. In addition to the public wharves at Douglas and Juneau there are private wharves located at these important points. Juneau is the capital and the estimated population, 1916, is 7,000. Wharfage charges vary from \$1 to \$2. Ports open all the year round.

Southwestern Alaska.—The principal ports of call are Cordova, Valdez, Ellamar, Latouche and Seward, all of which have public wharves except Ellamar, where freight has to be lightered. Ports open all the year round.

Alaska Peninsular Route.—This route includes the territory from Cook Inlet southwesterly, taking in the Aleutian Islands, such points as Anchorage, Illimna, Kodiak, Afognak, Chignik, Uyak, Seldovia, Karluk, Dutch Harbor Unalaska, etc. In all cases freight has to be lightered except at important points like Kodiak, Chignik, and Uyak. Service irregular. Write to Alaska S. S. Co., or Pacific S. S. Co., Seattle, Wash

Bering Sea Route.—This territory embraces the region lying north of the Alaska Peninsula, Bristol Bay,

Koskokwim Bay, Nome, St. Michael, Kotzebue Sound, etc. All freight has to be lightered and ports are closed from November 1 to June 1.

Yukon River.—This route is served by steamships to St. Michael, thence by river boats or steamship, Seattle to Skagway, and thence by railroad and river boats. It takes in the entire stretch of the Yukon, a total distance of 2,164 miles. Among the principal places are Dawson in Yukon Territory, and the following in Alaska: Fairbanks, Tanana, Kokrines, Koyukuk, Nulato, Anvik, Holy Cross and various trading posts and mining camps. Closed to navigation November 1 to June 1, but Tanana and Fairbanks can be reached by a winter stage trail operated in connection with steamship and railroads, thereby giving that interior section all-winter mails.

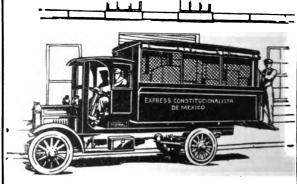
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## F-E-D-E-R-A-L

## North Pacific Coast Timber Supply

By Thorpe Babcock, Formerly Secretary West Coast Lumber Manufacturers' Assn.

The North Pacific Coast is blessed with the largest and finest timber growth in the world. In 1918 the lumber cut of this region totaled, in round numbers, 6,000,000,000 feet. This lumber supplied all local demands and large quantities were exported. Export mills are practically all on tidewater, which results in economy in the handling of cargoes. The climate varies but little the year round so that cargoes may be shipped at any time of the year. The logging operations are generally in close proximity to the mills and the transportation of logs is almost entirely by water—another fact resulting in economy of mill operation.

Very few mills export direct. According to the usual practice the foreign buyer makes his purchase through exporters. Some of these exporters operate their own vessels but most of them charter vessels as required. The exporter places the order with the mill operator, who is responsible for the quality of the material loaded. All shipments are carefully inspected by thoroughly experienced inspectors and due to the general conditions and facilities, shipments may be cut, inspected and loaded without delay. After the vessel is loaded the bills of lading for the cargo are signed by the captain of the vessel. A draft is drawn for the value of the cargo and the bill of lading attached and these documents deposited in a local bank for collection. Payment in full is usually received by the mill operator from the exporter immediately upon departure of the vessel. The exporter usually sells to the purchaser on 30, 60 or 90 days.

#### Inspection

Inspection referred to in the above is carried on by Pacific Lumber Inspection Bureau, which is a bureau organized for the sole purpose of acting as an impartial medium between buyer and seller for standardization of grades and sizes, and to insure the buyer securing the grades ordered. The services of this bureau have become so universally recognized that it has become a custom in shipments destined to foreign countries by water to make the certificate of inspection as much a part of the papers as the cargo manifest. In fact, American banks generally require this certificate. Its contents are certified to before a notary by the inspector, and certified under the seal of the bureau.

The principal species found in this region are Douglas fir, red cedar, western hemlock and spruce.

Douglas fir is by far the most important of these species. The following quotations from United States Forest Service Bulletin No. 88 give a good idea of the value of this wood:

#### Douglas Fir

"Douglas fir. may, perhaps, be considered as the most important of American woods. Though in point of production it ranks second to Southern yellow pine, its rapid growth in the Pacific Coast forests, its comparatively wide distribution and the great variety of uses to which its wood can be put, place it first. Estimates of the available supply range from 300,000,000,000,000 to 350,000,000,000 feet board measure. It is very extensively used in the building trades; by the railroads in the forms of ties, piling, car and bridge material; and by many of the manufacturing industries of the country. As a structural timber it is not surpassed and probably it is most widely used and known in this capacity.

"Douglas fir is manufactured into almost every form known to the sawmill operator. A list of forms and uses would represent many industries and would include piling and poles, mine, timbers, railway ties, bridge and trestle timbers, timbers for car construction, practically all kinds of lumber for houses, material for the furniture maker, boat builder, special products for cooperage, tanks, paving blocks, boxes and pulp wood, fuel and a long line of miscellaneous commodities

"Piling is extensively employed in harbor improvement work and in preparing foundations in soft ground for bridges, trestles, and other heavy structures. The long, straight, slightly tapering trunk of Douglas fir fits it for this use, and it is strong, resilient and fairly durable. It has no important competitor as a pile timber in the Western part of the United States and is used almost exclusively for marine and railroad work on the Pacific Coast. The wood is sufficiently hard to penetrate readily most soils, and it acts well under the hammer. It is occasionally necessary to band the tops of piles to prevent brooming and splitting, but bands are used only where hard sub-soils must be penetrated.

"Ties of Douglas fir are both sawed and hewed, though three-fourths are sawed. Those which are sawed are made both from second growth and from mature trees. About two-thirds of the ties supplied by the forests of the western part of the United States are of Douglas fir, the remaining one-third consisting chiefly of Western yellow pine, lodgepole pine, redwood and Western hemlock. Practically all the large sawmills in Washington and Oregon cut fir ties to order and some small mills cut little or nothing else. It is customary to saw ties from a large portion of low grade material obtained in the usual milling operations. Douglas fir generally yields about 25 per cent of high grade lumber, and the remaining 75 per cent must be worked into lower grade lumber, dimension products, timbers and ties. Though the season in which the trees are cut probably influences the durability of the wood, no consideration is given this element by the tie makers.

"Pit Props: One of the large uses of Douglas fir both in the form of sawn timbers and poles is for mining props. Owing to its ready availability in any size and its recognized compression strength, the wood is extensively used in mines of the United States. Dougals fir mining props can be obtained from Washington or Oregon in any quantity desired and with available transportation this should be a most satisfactory business for buyer and consumer.

"Bridge and Trestle Timbers: Probably the Pacific Coast railroads use more Douglas fir than is consumed by any other single industry. Bridge and trestle timbers of the wood compare very favorably in their structural merits with those from any other American species.

"They are light and strong, fairly resilient and durable and can be had in any desired size or specification. In trestles, fir is used in the round form for piling and, in dimension sizes, for posts, caps, sills, ties, girts and braces.

"Car material: Douglas fir car sills are used in the construction and repair of freight and passenger cars throughout the United States. Their strength, elasticity, durability and the ease with which the wood may be worked, make them preferable to all others. The wood is much employed in car building for purposes other than sills. In fact, it is used for nearly all purposes, except for draft-rigging supports, which are of oak or maple. It is employed for siding, framing, flooring, roofing and many other parts of passenger cars. Though the interior finish of cars is general-

ly of hardwood, Douglas fir has been given place in some dining and private cars, because of the beauty

of its grain.

"House Construction Material: For house construc-tion Douglas fir is manufactured into all forms of dimension stock, and is used particularly for general building and construction purposes. Its strength and comparative lightness fit it for joists, floor beams, rafters and other timbers which must carry loads. Occasionally entire buildings are constructed of it, and in some parts of the Pacific States it is practically the only common lumber used. The largest consumption is in Washington, California, Oregon, Utah, Idaho and Colorado.

"Flooring: The comparative hardness of the wood fits it for flooring, and it meets a large demand. Douglas fir edge grain flooring is often considered superior to that made from any other American soft wood, and it is used on the Pacific Coast to the exclusion of

nearly all others.

"Finish: In the Northwest, where the merits of Douglas fir are best known, the wood has recently gained an important place for finish. Clear lumber, sawed flat grain, shows pleasing figures and the contrast between the spring and summer wood has been considered as attractive as the grain of quarter-sawed oak. It takes stain well, and by staining the beauty of the grain may be more strongly brought out and a number of costly woods can be successfully imitated, Fir finish has been widely advertised, and the demand for it in the Eastern states, the Middle states and the upper Mississippi Valley is rapidly increasing. Its chief use is for door and window casing, base boards and all kinds of panel work. Practically all of the finish is used by the building trades and the largest use, naturally, is near the points of production, though it is in great demand in Southern California and Hawaii.

"Paving Blocks: Paving blocks of Douglas fir, when given preservative treatment, are rapidly coming into use in municipal improvements. The wood's hardmess and the comparative ease with which the blocks may be treated with creosote, make it compare favorably with other paving woods. The blocks wear slowly under heavy traffic, are nearly noiseless, furnish fair toe-hold to horses, are resilient and are practi-cally impervious to water. It is important, however, that they be thoroughly impregnated with preservative."

#### Red Cedar

Washington red cedar has certain individual qualifications which particularly fit it for certain purposes. wood is soft and straight grained. It takes stain well. It is especially suited for siding or any outside forms exposed to the weather since it has remarkable durability and holds paint well. Red cedar is used for the construction of rowboats, canoes, motorboats and similar small vessels. Having a low shrinkage factor it readily resists alternate changes from wet to dry. Red cedar is cut extensively into shingles and for this use it undoubtedly has no equal. The life of the shingle is measured by its mechanical wear since it does not decay. Red cedar is a particularly favored wood for use in lining closets and making clothes chests. The odor of the wood is very pleasant but is objectionable to moths and similar insects.

#### Western Hemlock

The following quotations regarding western hemlock are taken from United States Forest Service Bulletin No. 115. From this information it is possible to get a fair idea regarding the properties and adaptability of this wood.

"Structural Uses: The demand for western hemlock both in the form of ordinary lumber and for special uses will no doubt increase when its properties are better known. At present it has a very poor market standing because of the prejudice against the name "hemlock." The lumber is practically free from pitch, has a handsome grain, takes paints and stains well and

works smoothly, both spring and summer wood standing up well to the cutting edge. It is at present manufactured into the common forms of lumber, and is also used for pulp, boxes, barrels, sash and door stock, fixtures, furniture, and other special uses. In the form of lumber western hemlock is often mixed with Douglas fir and is sold and used for the same purposes. It is only a question of time when western hemlock will be sold under its own name and on its own merits.

"Bridge and Trestle Timbers: Western hemlock is well suited for use in all but the heaviest construction work, as shown by results of the tests discussed in this bulletin; but up to the present it has had a limited use in bridges and trestles. It has been used in some instances for caisson construction.

"Crossties: A considerable amount of western hem-lock is cut into crossties. Many of the western railroads use Douglas fir, western larch, redwood, and western hemlock almost exclusively for tie material. A large percentage of these ties are laid without preservative treatment.

"Poles and Piling: Occasionally western hemlock is cut into telephone or telegraph poles, but its use in this form has been very limited. It has the requisite strength for pole use and grows in such dimensions as to make it very suitable for this class of work. With good butt treatment with some efficient preserving fluid it should give good service as a pole material.

"Though practically all piling in the Pacific Northwest is of Douglas fir, western hemlock is used to a limited extent, however, for this class of work and has apparently given satisfaction.

"Framing: In the house construction western hemlock is used a great deal as a framing material. For this class of work it serves as well as Douglas fir, and locally commands the same price. Western hemlock dimension stock in cargo shipments commands a lower price, however, than Douglas fir, because of the prejudice which exists against it.

"Flooring: Western hemlock, when cut edge grain, makes an excellent flooring material. It finishes smoothly on account of the uniform texture of the wood and it also wears evenly. It is not suitable for use in damp places on account of its tendency to warp under such conditions.

"Inside Finishing: As a finish lumber western hemlock has the advantage of containing practically no pitch, it has a beautiful grain, works smoothly, takes stain readily, and, when properly dried, will not shrink, or swell materially under normal conditions. It presents a comparatively hard surface and consequently

does not mar easily.

"Barrels and Boxes: Western hemlock is used to a large extent for barrels and boxes for shipping foodstuffs. For this purpose it serves admirably, since the wood is odorless and tasteless. Its strength and lightness also add to its value for these uses. It has some tendency to split when nails are driven into it. but this fault may be largely overcome by the use of fine nails.'

#### Spruce

The peculiar characteristics of spruce have obtained for it a wide variety of applications.

It is a very white, straight grain wood of tough fibre, is entirely without taste or odor, and is of very light weight and is extremely stiff.

It cuts to particular advantage for doors, window and door frames, moulding, steeping, cornices, and is ex-tensively used for bevel siding for house construction. Because of its entire lack of taste or odor it is un-

surpassed for the manufacture of shipping packages for butter, meats and other food products, and it is given

special preference for making refrigerators.

It is highly valued and finds a wide demand in the construction of pianos, organs, violins, guitars and mandolins, and because of its stiffness, tough fibre, straight grain and light weight it has been given a prominent place in the building of aeroplanes.

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## Timber of the Pacific Countries

## By Charles Lugrin Shaw

Timber will continue to play for many years to come, as it has played since the dawn of history, a leading role in the commerce of the world.

The innumerable uses to which timber and its byproducts can be put will probably remain constant as
long as civilization rests on its present plane. Certain
it is that while forest resources are available—and
universal adoption of steadily-improving methods of
afforestation will make them practically perpetual—
there will be a demand for their produce. Markets may
fluctuate. Cost of production and transportation may
remain dominating factors, but the world cannot do
without lumber. And those countries that have forests
may take heart, knowing that their future is on bedrock foundation.

For the countries bordering on the Pacific this condition of a permanent world demand has special significance, because they are endowed with a wealth of timber, and it will fall largely upon them to meet the deficiencies elsewhere. The American northwest and Pacific Coast states and British Columbia may reasonably expect to retain their leadership, but there are other portions of the great Pacific realm which have claims that cannot be denied. It may be well, therefore, to take stock of these foreign timber areas on the Pacific seaboard and to briefly analyze them. That is the purpose of this article. No attempt will be made to describe the lumber situation in our own country, nor to dwell upon tree products other than timber.

#### The Forests of Mexico

Taking first our nearest neighbor, Mexico, we find that, while that country is at present capable of absorbing large quantities of American lumber, there are extensive tracts of valuable forest worth exploitation and that when normal political conditions prevail Mexico is able to compete with the yellow pine region of the Gulf States and hold its own. The mountains of Mexico abound in forests of pine and cedar. The pine grows at a high elevation and while inferior to the American variety is nevertheless an excellent wood. The cedar is used principally in the native furniture industry and for the manufacture of cigar boxes. It is harder than the species found in the United States. While extensive areas of forest have been ruthlessly razed by the natives in past years, one of the big difficulties now is to secure competent labor and stimulate native interest in the possibilities of timber exploitation. The Madera Company, owned by the Mexican Northwestern Railway, operates two mills with a combined capacity of 300,000,000 feet a year and it is estimated that the immense timber stands of Sonora and Chihuahua offer opportunity for a century of lumbering. This gives an idea of the great future before Mexican forest industries.

The very name of Guatemala means "covered with trees" and it was well chosen. Mahogany is the country's most important tree. This may also be said of Nicaragua, Salvador, Costa Rica and Panama, and the exports have steadily grown. Cocobolo, a dark wood of fine texture and becoming popular for cabinet making, is produced in Panama.

From the standpoint of export, the timber forests of the western coast of South America are practically negligible. While the countries bordering on the Pacific, especially Chile and Peru, do possess large quantities of valuable timber, the major portion of the supply is difficult of access, being located on the slopes of the mountains of the interior. Logging methods have not been developed to the high state of efficiency that has been attained in our own country and only a

halfhearted attempt has been made to get the full value from the timber resources; although many of the countries' industries are based on tree products, such as the bark of the cinchona (quinine) and rubber from the caoutchoug.

#### Timber in Chilean Mountains

In Chile vegetation is most abundant in the territory adjacent to the 40th parallel of latitude. North of this region the forests are confined principally to the mountains. To the south are occasional stands of beech and cyprus and a species of tree known as Fitzroya Patagonia, wrongly called the larch. Oak has been introduced and thrives in some localities. Araucaria, or Chile pine, thickly clothes the Andes slopes in some parts. The trees are coniferous and reach a height of 150 feet. The wood is heavy, solid, hard and beautifully veined, and is often used for masts of ships, and also for furniture.

The forests of Peru are of small commercial importance. The mountains are fairly densely wooded and the maritime ranges exposed to fogs and heavy rain have sufficient timber to give a green aspect, but the forests are regarded as hardly worth exploitation. The same condition is true of Ecuador, where a few cabinet woods are found, and of Columbia, where the forests are too far up in the hills to make them of commercial importance at the present time.

Although there is very little manufacturing from native logs along the west coast of South America, there are several planing mills which get the rough lumber from elsewhere and work it up. Ninety per cent of the lumber imported into Peru is from California, Washington and Oregon, and consists principally of Douglas fir and redwood. The trade is carried on almost entirely through commission firms.

#### Chinese Coast Denuded

China is one of the largest importers of North American lumber among the countries bordering on the Pacific, and lumber constitutes one of the principal commodities shipped into Shanghai and the other big Chinese ports. But it would be unfair to say that China lacks timber resources of its own. With improved logging and milling facilities, as well as better means of transportation, China will be able to make fuller use of them. Some magnificent pine stands are to be found in the central provinces, but some of the coastal sections are practically devoid of worth-while timber. Along the Gulf of Pechili stone mile posts had to be put down on the railways because the natives stole the wooden ones for fuel. Forests are numerous in Cochin-China, and the wood is easily worked and of a very fine grain, although often fragile.

Like South America, China possesses a good many sawmills, although their cut is mainly of foreign timber. For instance, Shanghai has several mills operated by natives and foreigners alike, but most of the timber comes from outside China. Oregon, Washington and British Columbia supply fir. White oak, brown ash and pine come from Japan and sen and katsura are imported from the same country in smaller quantity. The Shanghai mills also use Philippine hardwoods, mostly lauan, apitong and lumbayao, used extensively for flooring, furniture and interior finish. Northern China supplies large quantities of timber, about half of which is white pine, and the remainder oak, ash, butternut and basswood. Russia is expected to send a large amount of pine when conditions become more settled. Russian pine can be cut in much larger dimensions than the Chinese variety and is therefore in much greater

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demand for certain purposes. The cheap labor in China will always be a strong factor in favor of home manufacture of lumber, and for this reason it is improbable that China, although presenting an almost unrestricted market for forest products, will buy anything but rough material from outside for many years to come.

#### Manchuria's Possibilities

Many sections of Northern Manchuria are densely forested and logging has only just been introduced on an extensive scale. Before war conditions tied up shipping, Manchuria shipped considerable quantities of lumber to Australia and the United Kingdom. A species of white pine, known as Kedr and resembling Archangel pine, grows extensively in Manchuria and found a considerable sale in England before the war. The American consul at Harbin wrote recently that there are several timber owners in Manchuria who would like to interest American capital in the development of their business, as the timber grants are much larger than the present owners can handle.

Shipbuilders at Hongkong state they are in the market for Douglas fir for decking and other purposes, provided the wood is properly seasoned. Teak has been mainly used for decking in the past, and lauan, from the Philippines and East Indies, has been one of Douglas fir's strongest competitors. Redwood and red cedar, if the price is moderate, should be favored in Chinese markets because they are not affected by

the white ant.

#### The Woods of Australia

Australia, while possessing valuable stands of timber which have been extensively developed in some parts, is in the market for large quantities of lumber, and for many years the country has been one of the largest importers doing business with American mills. Australian forests cover about 173,500,000 acres. The Eucalyptus, which has about 150 species, is the most important family of trees and is predominant in Western Australia, where most of the big timber is produced. The jarrah is the principal variety and is one of the best hardwoods in the world. Unfortunately, the export trade of jarrah has to a very large extent taken the form of railway sleepers and paving blocks, and in some quarters this has given rise to the utterly erroneous impression that the timber is unsuitable for any other purpose. Karri, another kind of eucalypti, is a taller tree, but the wood is not so valuable as jarrah because it has a tendency to shrink. Neither woods effectively resist the teredo. Ironbark, grown in New South Wales, has proved useful for telegraph poles and bridge timbers and in some cases has withstood the elements for half a century without sign of deterioration. Tallow wood is least liable to shrink of all Australian hardwoods and is extensively used for carriage-making, flooring and decking. Red Gum is the most durable wood Victoria produces, although it is difficult to work. The Turpentine tree is said to be teredo-proof as well as a resister of the white ant, and quickly dulls the teeth of saws. Australia has many other varieties of timber, but those of the greatest commercial importance have been specified.

#### Australia a Competitor?

But, despite these resources, the necessity of Australia's importing a large proportion of its lumber requirements is generally admitted. While local production increased from 1903 to 1913 from 371,000,000 to 683,000,000 feet, imports increased in the same time from 114,000,000 in 1903 to 135,000,000 feet in 1913. Even the timber owners and sawmill operators recognize the dependence of Australia on imported lumber. The feeling of the country is, however, that the timber should be imported in rough form so as to encourage manufacturing in Australia. It is probable that when transportation conditions return to normal again, Australia will enter the export market itself on a considerable scale, and the Commonwealth has already made extensive plans for supplying hardwoods for the reconstruction of

France and Belgium, but cost of production is a factor to be reckoned with in competitive business and in this respect Australia may suffer. Wages are high and labor is organized to such an extent as to hamper operations and make really cheap output impossible.

New Zealand and Tasmania possess valuable timber. Kauri pine is one of the most important varieties, and it is exceeded in strength only by pitch pine and Baltic redwood. Kauri pine is good for all classes of joinery and house construction, for railway sleepers and decking, provided it is well seasoned. Totara, resembling cedar, is very durable and is exclusively used for New Zealand telegraph poles. It is also popular for sleepers and general construction. Rimu or Red Pine is a more ornamental wood and is used for house interiors. Black Pine is used for bridge building and heavy constructional purposes. Kahikatea is said to make good flooring, but is readily attacked by the boring insects of the tropics. The Honeysuckle is used for cabinet making. The necessity of afforestation is now fully realized in New Zealand, large areas of virgin forest having been completely destroyed during the past two or three decades.

The Eucalyptus is the principal tree of Tasmania, as in Australia, and the Blue Gum is the principal species. In heavy constructional work Blue Gum has few, if any, superiors. Stringy Bark and Swamp Gum are more extensively used than Blue Gum for house building. Blackwood is used for interior finishing. Myrtle and Tasmanian oaks make up another class of

useful timber.

#### Siberia's Great Future

A gigantic belt of forest extending from the Baltic country to the Pacific, with very few breaks in its continuity, makes Russia the greatest timber country in the world. Including Finland, Russia possesses nearly 500,000,000 acres of forest, and in Asia 326,000,000 more acres of timbered territory were under Russian Crown control before the first revolution. Canada, it is estimated, has 800,000,000 acres of forest, and the United States, exclusive of Alaska, at least 500,000,000, so that Russia stands well in front.

For the purposes of this article, however, we are only concerned with the timber resources of Siberia. A liberal estimate places these resources at 1,333,400 square miles, but this figure includes large areas that cannot be classed as commercially valuable. The principal softwood species are pine, spruce, larch and fir. Siberian pine (Pinus cembra) is perhaps the best of the Siberian coniferous timbers, and it grows abundantly in the Tobolsk, Tomsk and Yenesei districts and extends beyond Lake Baikal. Larch is more abundant east of the Yenesei river and with pine it is plentiful along the Amur valley, while the other varieties are fairly generally scattered. In the maritime regions, within the influence of the milder climate and heavy rainfall, there is a remarkable variety of commercial hardwoods in addition to the conifers. There are stands of oak, ash, walnut, elm, birch and velvet.

#### **Exploitation Backward**

Yet, with this wealth of timber, the industry has never received attention commensurate with its possibilities. Most of the smaller towns of Siberia have sawmills, but they operate only during a short summer season and have a limited capacity. The output is practically entirely for local requirements. Lack of proper transportation facilities has always been a formidable obstacle and under present conditions Siberia will not be able to ship much timber either by rail westward or to the Pacific coast. At present, of course, the whole of Russia is so disorganized that doubt and uncertainty enshroud every industry, but with the introduction of modern methods at a time when the political and economic conditions are settled there is no doubt that Siberia will ultimately become one of the world's greatest timber exporting countries. In the event of the Kara Sea route being developed on any large scale, certain classes of sawn and structural tim-

ber could supply profitable return cargoes. The prospects of developing timber export trade between the Siberian coast and Asiatic ports are regarded as favorable owing to the proximity of the source of supply to the market. When conditions were normal a hardwood veneer plant was operating in Siberia with a view to supplying the English market. It is believed that the export of hardwoods from Siberia to the American Pacific ports also has possibilities, and the pulp and paper industry is certain to become important. Finland and European Russia used to supply the Siberian demand for paper, and lately Japan has been shipping, but with such a vast store of pulp wood Siberia cannot remain in this anomalous position for long.

#### Japan Finds Markets

Japan, on the other hand, seems determined to make the most of its comparatively large area of forest—28,000,000 acres, and has not only found a market for its timber in many places in the Orient, but has been able to secure a firm foothold in American ports. Until fairly recently large quantities of Japanese oak were imported into the United States for railroad ties. Japanese oak began to make its appearance on this coast in appreciable volume in 1904, and its use so increased that until the lack of shipping prevented its importation, it represented approximately 90 per cent of all the oak used on the Pacific coast. It was not until 1909 that the lumber was declared dutiable as cabinet wood. Japan, however, appreciates the value of husbanding its timber resources and for some time past the government has seriously studied the question of forestry and applied the most advanced methods of reforestation to some sections. For this reason it is improbable that Japan will undertake to denude its forests for the sake of its export trade. A more probable development is the complete utilization of its wood in Japanese manufactures, rather than the shipment to foreign countries of its raw material.

Japanese oak is much the same as American oak and has attracted the attention of European wagon builders and other manufacturers owing to its low price. Shira Gashi and Aka Gashi are two of the more important species of Japanese oak and are useful on account of their durability under friction and strain. The beams of the lighthouses along the Japanese coast, built many years ago by English engineers are of Keyaki, a species allied to the elm. Hinoki is similar to the yellow pine of the Mexico Gulf states and is a favorite wood for uprights in house construction, for doors, windows, boat-building and cabinet work. Sugi is one of Japan's commonest softwoods and is inclined to be perishable and with Aka Matsu is used extensively for native

house-building. A variety of ash and Katsura, well adapted for cigar box manufacture and light furniture making, is plentiful and grows to a height of about eighty feet. Japanese sawmill methods are capable of much improvement, but are unquestionably efficient in the kind of work they handle, and are probably the best organized in the Far East.

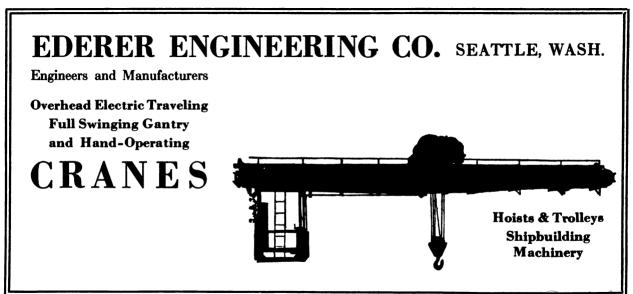
#### Philippines and East Indies

During the war, while high transpacific freight rates prevailed, Philippine lumber secured a strong foothold in the markets of the Far East. In the China ports particularly the first consideration in lumber purchasing appears to be low price, the quality of the material being evidently of secondary importance. Former buyers of Douglas fir in Hongkong, for instance, have turned to Foochow pine or to the cheap, soft lumber from Formosa and Japan, and for interior finishing there has been a good demand for Philippine hardwoods, and also for Lauan, the principal softwood product of the Philippines. Lumber production in the Philippine Islands has been stimulated recently not only because the export markets have offered unprecedented opportunities, but as a result of increased industrial activity at home and the growing tendency of the native population to build frame houses. Freight rates have also adversely affected the Philippine lumber business, and exports to the United States and other distant countries have fallen considerably during the last three years. The islands produce some of the finest shipbuilding timber in the world.

The East Indies, generally speaking, are well wooded. The principal tree varieties are: Arang (ebony wood); Behlo-Ham, employed in naval construction and as a substitute for Arang in cabinet making; Kejoe-Besi (ironwood) used in lining ship timbers; Tanoeu, useful for joinery; Masi Meira and Bjati Kapoor, products of Java forests, used in general construction work. The impetus given to the lumber industry in the Philippines has spread to parts of Borneo and Sumatra, where methods are being introduced. A certain amount of teak is taken out of the woods of the East Indies.

Vast forests of teak are found in Siam and along the Malay peninsula. When the rough wood is dry enough after cutting, rafts are made from it and it is taken in this condition to Bangkok, where it is usually sawn into planks. Takieng, found in the interior of Siam, is a rival of Teak and possesses the valuable quality of being easily bent. Species of pine grow in considerable quantity, and among the other varities of timber may be mentioned the fig tree, the wood of which is used in cabinet making.

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## Creosoted Fir Paving Blocks

By O. M. P. Goss, Consulting Engineer for Ass'n of Creosoting Companies, Pacific Coast

Statistics show that since 1908 the increase in the use of creosoted Douglas fir blocks in the United States has been very rapid. For example, in 1908, 1,260,000 cubic feet are reported to have been laid, which amount was increased to a total of 10,000,000 cubic feet in 1911. Recent years have shown even greater increases, 1914, alone, approximating 4,800,000 cubic feet of wood block pavement.

The reason for the increased use of this type of pavement is very evident. Engineers and investigators have been working to perfect wood block construction and have made good progress. This type of pavement must be used with a full knowledge of the material or the results may not be satisfactory. There is probably no material which requires more careful study than wood block in order to secure the very best results. On the other hand this material may be inspected as to quality, with a greater degree of certainty than practically any other material. Due to this certainty of inspection it is possible with efficient supervision to secure a first class job in construction. In other words, any defects in the wood may be readily detected by a visual test, making inspection of the simplest type.

As a result of experience with creosoted wood block in the United States it has shown such excellent qualities as to encourage a more thorough study of the subject with a view to correcting any objectionable points. The following points, in favor of, and against this type of pavement are generally recognized among engineers.

Favorable properties may be classed as, durability, low maintenance cost, noiselessness, ease of cleaning and repair, neat appearance, smoothness of surface, low tractive resistance and sanitary qualities.

Wood block pavement, if properly laid, is known for its great resistance to the wear of traffic; in fact, greater than any other material, with the possible exception of granite. The maintenance cost is very low; the feature of noiselessness is one of very great importance in narrow or congested streets; also in residence districts. The wood acts as a cushion, absorbing rather than reflecting the noise of traffic. The dark color of the material absorbs rather than reflects light. The smooth, uniform surface is very easy to clean. Coal tar creosote has highly antiseptic properties and discourages flies and other insects that are ordinarily attracted by street filth.

Recognized unfavorable points are expansion, bleeding and slipperiness.

Expansion has probably caused more trouble with wood block pavements, in general, than either of the other objectionable points. Expansion is caused by the absorption of water by the cell walls of the wood. Any treatment which will retard the absorption of moisture will assist in the elimination of swelling. Experiments have shown that thoroughness of crossote oil penetration, plays an important part in retarding volume changes. A block treated with thirty pounds of oil per cubic foot, will, when put to an extreme soaking test, swell practically as much as a similar block throroughly pentrated, but containing only twelve pounds per cubic foot. The former block will absorb less moisture in amount than the latter, but the swelling action will be practically the same in both.

The main point in treating blocks is to secure a thorough and through penetration with a reasonable amount of oil. Creosoted Douglas fir blocks thoroughly penetrated with eighteen pounds of oil per cubic foot reduced to twelve pounds per cubic foot are relieved

of 35 per cent of their tendency to shrink and swell when put to extreme soaking tests.

There are three very essential details of construction which will in combination eliminate expansion trouble. These details are as follows:

- 1. Place blocks on an asphalt or tar coated base since this seals the lower end almost eliminating the possibility of water entering at the base of the block.
- 2. Provide liberal expansion joints adjacent to the curb.
- 3. Lay blocks in courses at an angle of 60 to 67 degrees with curb. By this method the expansion may be relieved within a short distance whether it occurs along the short or long dimension of the block.

Bleeding is undoubtedly influenced largely by the quality and amount of the preservative used. Heavy oils appear to bleed more than light oils. It is the general practice on the Pacific Coast to use a pure coal tar creosote of 1.03 to 1.07 specific gravity at 100 degrees F, and to treat blocks with from sixteen to eighteen pounds per cubic foot, which amount is afterward reduced by "expansion and vacuum" to twelve pounds per cubic foot. This reduction in oil content is accomplished by heating the blocks while submerged in the preservative, from 180 degrees the pressing temperature to 230 degrees, as rapidly as possible and holding in the oil bath at this higher temperature for one hour. This increased heat expands the oil and vapors which expansion, together with the final vacuum, results in reducing the oil content from four to six pounds per cubic foot. This treatment gives an ideally treated block with a thorough penetration with sufficient oil to preserve it and it will not bleed under street conditions. A wood block pavement laid in Tacoma, Wash., has shown no signs whatever of bleeding during a week of as hot weather as is usually experienced on this Coast.

Slipperiness is the least of troubles experienced with Douglas fire blocks. This wood is not extremely hard but is strong and tough. The fibers of the wood compact and mat together forming a wooden sheet.

All pavements are slippery under certain weather conditions; particulary, when the surface is new and in nearly its original condition. Creosoted wood block pavement, in practice, does not show the slipperiness that is generally credited to it. The fact that this pavement has a smooth and very uniform surface reduces the traction resistance to a minimum; consequently, an equal load can be moved with less pull than over many of the supposedly less slippery but rougher pavements. It is also a fact that horses last much longer on wood block pavements than on stone or brick. Their feet and legs are not subjected to the jar of an unyielding surface.

Douglas fir blocks treated so as not to bleed and imbedded with fine gravel, form a nonslippery surface.

One of the most important details is the treatment of the blocks. Douglas fir is unlike most woods from the standpoint of impregnation. It has been necessary to develop treating methods especially for this wood in order to get the results desired.

Paving blocks of any wood should be treated in such a way as not to cause any appreciable loss in strength.

Douglas fir has thoroughly demonstrated its ability to withstand the wear found on business streets. Almost seven years ago a portion of Fourth avenue, Seattle, was paved with creosoted Douglas fir blocks. This street is today in excellent condition, and the city has had no maintenance costs to pay. The wear

on the blocks has been approximately 1/16 of an inch and more than 3,300 vehicles daily pass over this pavement.

Eleven years ago Douglas fir blocks were laid on Salmon street, in Portland, Ore. The city records indicate that the maintenance has been less than one-quarter cent per square yard per year. The wear on the blocks is practically nothing. The blocks were not properly treated.

Douglas fir blocks in Vancouver, B. C., where the pavement has been constructed in accordance with the best modern practice, have given excellent service and have demonstrated their ability to stand up under the heaviest traffic.

Douglas fir blocks were laid in Everett, Wash., approximately five years ago, and they are today in perfect condition and have not cost the city one cent for maintenance.

In 1911 the United States Government, in co-operation with the city of Minneapolis, laid some Douglas fir blocks on Nicollet avenue, which receives very heavy traffic. At the end of six years these blocks are in perfect condition and show approximately 1/8-inch wear.

The close grain of Douglas fir particularly fits it for paving purposes, and it will in the future play an important part in paving work to be done in this and other countries.

Douglas fir, or, as it is sometimes known in export trade, Oregon pine, is a wood admirably adapted to creosoted wood block pavement. It is semi-hard wood, but one which takes creosote readily in the form of blocks, has great resistance to wear, has really unusual strength of fiber and can be secured in large quantities of a high grade.

The ease with which creosoted Douglas fir paving blocks can be secured, their relatively low light weight and the ease of laying, plus their durability, make this material an extremely desirable one for pavement of streets, barns, warehouse and shop floors, in all climates, and, particularly adapt the material for the foreign markets.

The creosoting industry is represented on the Pacific Coast of the United States by six commercial plants, all of which are of considerable capacity; one being the second largest in the world; all of which are thoroughly modern and all of which are prepared to undertake creosoted wood blocks for paving purposes.

(Information on these companies furnished by addressing Pacific Ports.)

## **CANNED MILK PRODUCTS**

The states of Washington and Oregon produce and ship approximately 4,000,000 cases of evaporated milk in a year. The canned milk industry has grown to this tremendous volume practically during the past 16 years. The country west of the Cascade Mountains in Washington is admirably adapted to dairying—climate is mild, grass is green practically all the year round, and the fresh mountain streams supply plenty of pure water.

Evaporated milk is the principal product and differs from the so called condensed or sweetened milk because no preservatives or sugar have been added. It is only pure cows' milk with part of the water taken out by evaporation. It is then hermetically sealed and sterilized in the cans.

The popular brands of evaporated milk are packed in Tall size cans, 16 ounces net, and Baby size cans, 6 ounces net. All cans are packed in strong wooden cases. The Tall cans are packed 48 to the case—each case weighs approximately 64 pounds. The Baby size cans are packed 8 dozen or 96 cans to the case and weigh 51 pounds per case.

The dimensions of the Tall case are 201/4x13x91/8 inches. The dimensions of the Baby case are 171/2x

11½x11 inches. In filling export orders many manufactures give special attention to packing. In many instances cans are lacquered to prevent rusting. Cases are wired so that they will stand extraordinarily rough handling and prevent cases from being broken while in transit

Cubic space needed for each case when specially wired for exporting is 2600 cubic inches Tall, 1950 Baby cubic inches,

All goods are sold F. O. B. Seattle docks. Distributing agents located in the larger cities of almost every country on the Pacific Coast arrange for credit in Seattle.

Most milk for export is put out under the following specifications: 7.8 per cent butterfat and 25.5 per cent solids

The popularity of evaporated milk is increasing very fast. Some years ago it was only used in emergency, i. e., when bottled cows' milk could not be purchased. Today it is used for every purpose that fresh milk and cream can be used, and it is preferred on account of its convenience. When kept in a cool dry place it will keep indefinitely.

Samples of a popular brand of evaporated milk were shipped around the world for experimental purposes and when opened, the milk was just as good as when put into the cans.

Evaporated milk is now used almost exclusively on all boats. It is preferred by tourists who travel from one country to another because they are absolutely sure that when they get standard brands the milk they purchase is as clean, sweet and pure as when hermetically sealed in the cans.

The natives of foreign countries are fast acquiring the taste for evaporated milk, even though they have been familiar with the sweetened product for a longer period of time.

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# Fruit Industry of the Northwest

By W. F. Gwin. Vice President and General Manager Northwestern Fruit Exchange. Seattle

The four Pacific Northwestern states-Washington, Oregon, Idaho and Montana-produced and shipped during the season of 1918-1919 approximately 20,000 carloads of apples, a car containing a minimum of 37,000 pounds, or approxia car containing a minimum of 37,000 pounds, or approximately 756 boxes, of one bushel each. During 1917-1918 shipments totaled 24,900 cars. The weight of a fully packed box varies, according to variety, from 48 to 52 pounds gross (41 to 46 pounds net fruit according to variety, etc.), but are accepted by the American railways at an average specified weight of 49½ pounds The rate of freight in minimum carload lots of 31,000 to 35,000 pounds is \$1.06½ per hundred pounds to points on the Missouri river and per hundred pounds to points on the Missouri river, and \$1.00 per hundred pounds to points east of the Missouri river. This rate of freight is for ventilated shipment. Re-frigeration, which is optional with the shipper, costs extra, the cost ranging from 4 cents to 13 cents per box. The use of refrigeration is regulated by the temperature prevailing over the sections of the country through which the shipment is destined to pass, and also according to Certain of the more delicate varieties, such as Winter Bananas, Grimes Golden and the earlier shipments of Ionathans are almost invariably shipped under refrigeration. The harder and later varieties usually under ventilation. The use of refrigeration is also regulated more or less by whether the buyer intends the fruit for cold storage and long keeping, or whether it is intended to put it into consumption within a short time after arrival at destina-

The Pacific Northwestern states produce, according to crop conditions, about 10 to 20 per cent of the total apple crop of the United States. However, the character, method of packing, etc., of the Northwest production is distinctive. Apples produced in the eastern or middle western sections are packed in barrels. The barrel is unknown in the Northwest as an apple package, the fruit being packed in a standard box, containing a full bushel, with dimensions as follows:

Inside measurements: 18½x11½x10½ inches. Cubical contents, 2188 2 cubic inches.

Standard dimensions, Northwestern apple box shook: Two ends (each),  $11\frac{1}{2}\times10\frac{1}{2}\times13\frac{1}{6}$  inches; 2 sides (each),  $19\frac{1}{2}\times10\frac{1}{2}\times10\frac{1}{2}\times13\frac{1}{6}$  inches; 2 sides (each),  $19\frac{1}{2}\times13\frac{1}$ 

While the standard dimensions for box shooks above shown may be varied slightly by different associations, the inside measurements will not change, each box always containing a full bushel.

Over-all outside measurements, including cleats, 19%x 121/4 x11% inches.

Bulge, the bulge in top of box in center usually measures 1 inch to 11/2 inches.

Cubical measurements (outside), 1 2/3 cubic feet.

Note: This cubical measurement of 1 2/3 cubic feet is used by steamship companies in computing charges for ocean tonnage.

The fruit is packed in three grades, being in the order of quality, viz.: Extra Fancy, Fancy, C Grade. The specifications of these three grades, as officially adopted in 1916, are as follows:

"First Grade," or "Grade No. 1," or "Extra Fancy," are defined as sound, smooth, mature, clean, hand-picked, wellformed apples only, free from all insect pests, diseases, blemishes, bruises and other physical injuries, scald, scab, scale, dry or bitter rot worm, worm sting, worm holes, spray burn, limb rub, visible water core, skin puncture, or skin broken at stem but slight russeting within the basin of the stem will be permitted; 50 to 75 per cent of full color required, according to variety.
"Second Grade," "Grade No. 2" or "Fancy" apples are

defined as apples complying with the standard of first grade

apples, except that slight blemishes, such as scratches, leaf rub, limb rub and russeting shall be permitted, provided that no apple shall show blemishes of an aggregate area exceeding three-quarters of a square inch. No clearly misshapen or bruised apple, or apples bearing evidence of rough handling shall be permitted in this grade; 10 to 40 per cent of full color required, according to variety.

"Third Grade," "Grade No. 3" or "C Grade" apples shall consist of mature apples, free from all insect pests, worms, worm holes, infectious diseases, skin punctures, bruises or broken skin, but slightly misshapen apples, or those having sun scald, and not to exceed two stings to the apple, and blemishes not to exceed an aggregate area of one square inch, shall be permitted, and there shall be no color requirement.

Each apple is wrapped in tissue paper and packed under a standardized system, the number of apples per box being designated as follows: 36s, 48s, 56s, 64s, 72s, 80s, 88s, 96s, 100s, 113s, 125s, 138s, 150s, 163s, 175s, 188s, 200s, 213s, 225s. The figure represents the actual count in the box, "36s" meaning only 36 apples. The principal varieties of apples produced in the Northwest are given hereunder together with a table showing the approximate dates on which the first shipments are usually ready to leave shipping point in the Northwest, and showing the months of the year in which these same varieties are usually in the best condition for consumption:

Jonathan, shipment begins last of September; best condition, October-November.

Winter Banana, last of September-October, November, December.

Grimes Golden, middle of September-October, Novem-

Spitzenburg, last of September-November, December.

Delicious, last of September-November-December.

Stayman, first of October-December, January, Febru-

ary, Rome Beauty, first of October—December, January, Feb-

ruary. March.
White Pearmain, first of October—January, February,

Yellow Newtown, first of October—March, April, May. Winesap, first of October—February, March, April. Arkansas Black, first of October—February, March,

April, May. Unusual advantages of soil and climate, the regulation of moisture by means of irrigation, the scientific methods employed throughout in the production, harvesting, grading and packing, all combine to produce an article of exceptionally high character and quality, with the result that Pacific Northwest boxed apples have come rapidly into favor with the discrimating trade in all parts of the civilized world. In practically every city and town of North America, in the principal markets of South America, Europe, North and South Africa, Australia and principal cities in the Orient, Pacific Northwest boxed apples are already handled in greater or less volume, and the consumption is steadily increasing.

While apples are the principal fruit production, the Pacific Northwestern states are already famous for the high quality of their pears, certain varieties of which are considered by connoisseurs as the most perfect specimens produced anywhere in the world. The Rogue River Valley of Oregon is especially famous in pear production, Doyenne d' Comice, Beurre Bosc, Beurre d' Anjou, Winter Nelis, Howells and Bartlett pears being the principal varieties. The Hillcrest orchards of the Rogue River Valley, owned by Reginald H. Parsons, hold the world's price record (any possible recent "war records" disregarded) for any While apples are the principal fruit production, the

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carload of deciduous fruit ever shipped from any point in North America. This record was made on a car-load containing 1,000 half boxes of Doyenne d'Comice pears, which was sold in London in the year 1909, at an average price of \$5.04 per half box, each containing from 35 to 55 pieces of fruit.

Other varieties of fruit produced in important quantities in the Northwest are prunes, plums and peaches. These varieties are shipped to all markets in the United States and Canada, and Italian prunes have found a Considerable export market in Europe and South America. The fruit growers of the Northwest are generally organized into associations which undertake, in most cases, the packing and shipping of the crops, and which employ rigid methods, of inspection so as to insure uniform quality and condition. The marketing is usually delegated to strong selling organizations having representatives in all of the principal markets of the world.

#### CALIFORNIA REDWOOD

By C. W. McCANN, Secretary and Manager, California Redwood Association.

California Redwood is called Sequoia Sempervirens by the Scientists, which means "Sequoia ever-living." Se-quoia is an Indian name; the name of a chief of great power and influence among his people. It was natural, therefore, for the Indians to name their giant trees after their most powerful chiefs. They are wonderful trees their living power is without peer among perishable plant and animal life. The secret of their great age is resistand animal life. The secret of their great age is heard ance to rot and fire, and practical immunity to the attack of insect life and fungus growth so destructive to most other kinds of wood. In the forests the Redwoods have fought decay and fire down the sweep of many cen-turies. They lived on, sturdy and strong, while other forest trees matured and died in successive crops.

By a freak of nature the Redwoods grow nowhere else in the world but in California. Their range is confined to a strip along the Pacific Coast north of Santa Cruz to the Oregon State line, extending inland not more than 10 or 20 miles. The principal stand of commercial lumber today is in the three north coast counties of Mendocino, Humboldt and Del Norte. Their growth ranges from sea-level to an altitude of 2,500 feet.

Redwoods grow in what is known as the "fog belt" and thrive on excessive moisture. There are millions of trees and they are estimated by the Government to contain between 50 billion and 60 billion B. M. feet of lumber more than enough to keep all the sawmills that are now cutting Redwood busy both day and night for one hundred years. The Redwoods grow big and dense, yielding on the average of 75 M. to 100 M. board feet of commercial lumber per acre. There are quite a number of instances where the Redwood was so dense and so big that a single acre has yielded more than 100 million B. feet. Redwood is the principal construction wood of California and is rapidly gaining favor throughout the East for similar purposes, since its two outstanding virtues-fire and rot resistance-have become well established.

Aside from Redwood's splendid virtues for general construction purposes, where rot and fire resistance are such essential features, it is rapidly becoming one of the foremost specialty woods and is used for the following purposes:

Incubators and brooders. Cigar boxes Insulation Green houses Pipe organs Fire walls Fireless cookers Lead pencils Ship interiors Battery separators Casket cases

Park equipment Ice houses Roofing-fire resistant Ice cream cabinets Fire door cores Bee hives Stake and fence posts Toys Elevator shaft linings Coffins Burial boxes

Some of the engineering uses are: Tanks (water, oil, storage, cyanide, etc.), concrete forms, curbing, railroad ties (sleepers), gutters, wood pipe, sheet piping, machine shop flooring.

As a matter of fact the first six months of the year 1918 one and a half million feet B.M. of Redwood was used in the principal shipbuilding and industrial plants of the Pacific Coast for flooring of their machine shops.

The agricultural uses are: Irrigating fumes, head gates, stock tanks, boxes, silos and well casings.

It is also used for all purposes where required to come in contact with soil or moisture.

Redwood is free from pitch or rosin, there being no trouble with raised grain; is porus, and absorbs paint readily, besides having a natural surface for stain, paint, or enamel. Paint does not have to be forced into Redwood by the use of excessive quantities of turpentine. Redwood has a cellular structure of large capacity which, when thoroughly dry, furnishes a penetration giving paint or enamel a firm hold on the wood as well as taking a sufficient quantity to give a thorough covering and an even distribution. All of these qualities make it a perfect wood for interior use, especially so with the very wide widths which can be obtained for panelling purposes.

The California Redwood Association, an organization composed of the principal Redwood mill owners, distributes literature and maintain facilities for answering the inquiries of persons interested in the industry.

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# Vegetable Oils

One striking result of the realignment of trade channels caused by the commercial upheaval attendant on the European war was the leap of Seattle into first place among the oil importing ports of the United States. From a negligible quantity before the war, there passed through the customs house in Seattle be-tween Jan. 1, 1918, and December 31, 1918, commercial oils to the value of \$54,738.311.

While there is some oil moving during every month of the year, the "oil season" is practically from January 1 to August 31 as it is during that period the great bulk of it moves. Owing to climatic and mechanical conditions Seattle will probably permanently maintain its lead as the principal port of ingress of these Oriental oils. During the months of their greatest movement it is so warm in the eastern ports and along the route of the Panama Canal, which has to be followed when oil is taken directly to New York from the Orient by water, that the oil thins and there is also danger of the cans expanding from the heat. From the Oriental ports to Seattle even in the middle of summer the oil cargoes pass through a perpetually cool climate and the temperature at Seattle rarely rises high enough to effect the consistency of the oils.

Seattle has in existence or under construction, total storage capacity for 30,000,000 gallons of oil.

The mechanical reasons that give the port of Seattle an advantage over New York lie in the splendid port facilities that Seattle possesses and the lack of the same facilities by New York. The oil is imported in five-gallon cans which are emptied into storage tanks at the ship's side and afterward emptied into tank

cars ready for shipment to all parts of America. When there is occasion, however, for the storage of oil before transshipment east. Seattle has capacious wharves to accommodate it for any length of time. Owing to the limited space available the docks of New York must keep the freight that passes over them moving. The rate by water from Oriental ports to New York is considerably more per ton than that to Seattle while the rate by rail from Seattle to New York is \$22.50 per ton. The climatic and mechanical advantages already referred to, as well as the additional freight rate from New York to interior points, more than equalize the differential in favor of the Eastern port.

The port of Seattle has provided at its Smith's Cove Terminal underground bulk storage tanks of the following capacities: 4 compartments, with a capacity of 50,000 gallons each, and 8 compartments with a capacity of 25,000 gallons each.

The four smaller compartments are equipped with heating coils for thinning the oil in cold weather, to expedite its handling. These tanks are built of concrete under ground and at ship's side, and can be filled either direct from ship by means of pumping and pipeline, or from oil in cases handled over the open wharf and bulked on three large specially equipped bulking tables. These bulking tables can handle twenty-four 8,0000-gallon tank cars per day. These bulking tables are also equipped with heating coils to facilitate handling of heavy oils. In addition to the above facilities a 6-inch pipe line has been installed from the oil tables to connect with the Proctor and Gamble steel oil tank. This tank has a capacity of 2,000,000 gallons, storage has a capacity of 350,000 cases. Open wharf When ships

#### IMPORTS OF SPECIFIED OILS THROUGH THE CUSTOMS DISTRICT OF WASHINGTON **FOR YEAR 1918**

		ION	1 LAN 1910			
1918	Cottonseed	Cocoanut	Peanut	Chinese	Soya	Rapeseed
	Oil	Oil	Oil	Nut Oil	Bean Oil	Oil
	Lbs. and Val.	Lbs. and Val.	Gals, and Val.	Gals. and Val.	Gals, and Val.	Gals, and Val.
January	318,922 \$ 34,060	8,890,624 \$ 1,080,154	415,487 \$ 378,990	207,120 \$ 189,343	20,506,073	459,775 \$ 387,883
February	1,425,000	5,362,775	895,260	63,571	26,661,410	349,601
	\$ 145,682	\$ 631,638	\$ 778,987	\$ 71,465	\$ 2,659,511	\$ 338,998
March	257,178	8,443,215	1,053,681	181,869	21,746,422	185,387
	\$ 31,073	\$ 1,004,849	\$ 914,824	\$ 174,208	\$ 2,778,305	\$ 185,234
April	1,652,354	12,249,827	2,812,839	221,502	49,336,063	233,660
	\$ 198,221	\$ 1,522,207	\$ 1,715,517	\$ 203,016	\$ 5,096,315	\$ 249,767
May	1,068,779	14,313,789	1,369,153	80,425	19,673,112	341,940
	\$ 87,579	\$ 1,748,969	\$ 1,327,802	\$ 79,464	\$ 2,216,703	\$ 391,426
June	375,000	7,485,450	255,158	336,839	41,311,060	158,852
	\$ 50,000	\$ 1,051,821	\$ 271,548	\$ 370,293	\$ 4,775,849	\$ 176,364
July	3,054,000	7,446,702	797,096	576,094	13,175,189	228,509
	\$ 376,650	\$ 1,018,258	\$ 733,325	\$ 533,174	\$ 1,482,633	\$ 225,050
August		9,590,753 \$ 1,195,696	279,531 \$ 278,942	27,140 \$ 24,984	10,143,370 \$ 1,183,770	113,334 \$ 115,171
September	103,847	7,248,989	616,632	717,393	22,962,550	319,886
	\$ 121,090	\$ 911,203	\$ 614,021	\$ 870,449	\$ 2,762,477	\$ 315,291
October	· · · · · · · · · · · · · · · · · · ·	0,00.			<u> </u>	125,817 \$ 131,469
Totals Value	11,003,939 lbs. \$ 1,373,988	85,765,415 lbs. \$10,830,860			258,737,037 gal. \$29,083,120	2,516,761 gal. \$ 2,516,653

cannot discharge at wharf direct lighterage service is provided with barges, which are brought alongside of the Smith Cove wharf and by means of mechanical equipment and cranes are discharged direct on wharf.

The oil is handled at the following rates: Oil in cases for handling from ship's side and bulking into tank cars or into storage tanks, per 100 lbs. on net weight of oil, 12½ cents.

This charge includes wharfage, handling from ship's side, bulking and pumping into storage tank or into tank cars alongside. In addition a rental charge is made for the use of tanks at the rate of \$1.00 per day for each 25,000-gallon compartment or any fraction thereof. These storage tanks are provided specially for handling the different kinds of oil and keeping separate the oils of different consignees when separation is requested.

The East Waterway Dock & Warehouse Company has erected on Harbor Island a very complete plant for handling all grades of oriental and domestic oils, including vegetable, fish and animal oils of all grades. The plant will accommodate 7,000,000 gallons of oil in steel storage tanks, which are already completed. Storage facilities for an additional million gallons are being considered. In addition there will be capacity for storage of 5,000,000 cases of 10 gallons each. The company has erected a 600-foot dock at which all Oriental vessels can dock, and pumping arrangements have been installed so that bulk shipments can be pumped direct from ship's tanks to the company's tanks. The facilities of this plant are capable of loading out at least 30 tank cars per day. Three warehouses having a combined floor space of 50,000 sq. feet have also been erected. The East waterway property is credited with being one of the finest privately owned terminals in the country.

Another feature of the oil movement from the Orient to Seattle is the fact that Proctor & Gamble, of Cincinnati, and Swift & Company, of Chicago, have steel tanks in Seattle capable of holding 3.500,000 gallons of Oriental oils, and these tanks are filled. The advantage of these tanks is very apparent now on account of the congested traffic conditions and shortage of equipment. In addition to the Port of Seattle and the East Waterway Dock & Warehouse Company, the Drummond Lighterage Company of Seattle also handle very large quantities of oils.

It is the consensus of opinion of most well informed persons that the oil handling facilities of Seattle are by far the best in the United States.

#### THE CHEMIST IN COMMERCE

By I. F. Laucks

The development of the Oriental trade in the United States has very naturally increased the demand for the services of the chemist and trained inspector. Importers of Oriental products are finding such service more and more essential to the satisfactory conduct of their business as the specifications of the eastern buyers become more clearly defined.

Where formerly oils were bought in the Orient on more or less indefinite specifications, as for instance, "Fair Average Quality," and were sold for Eastern account on the same basis; there are now definite specifications as to free acid content and percentage of moisture and impurities, etc., which must be fulfilled. Produce exchanges and chemical societies have endeavored to define the accepted meaning of such a term as "Fair Average Quality" in order that oil refiners may be able to judge the value of the various offerings to better advantage. It is of importance to the importer to be certain that the oil he has bought in the Orient under rather loose specifications is going to fulfill the requirements of the refiner before he ships the oil East. With the services of the chemist at hand he can sell on the basis of certificate of analysis attached to the bill-of-lading that assures acceptance on arrival.

An importer may have a lot of oil on hand which will not meet the specifications for use for edible purposes, but may still be excellent oil for another purpose, as for instance, paint manufacture. Then the services of the chemist are again necessary to determine, for instance, whether or not the oil will pass certain heat tests.

Copra bought and sold as "Fair Merchantable" sun dried, kiln dried or mixed copra varies considerably in content of oil. An importer can sell an exceptionally fine lot copra to much greater advantage if he offers it with certificate of analysis showing a definite percentage of oil than if he offers it as "Fair Merchantable," which term may be variously interpreted. A determination of the moisture content of a lot of copra will inform the owner whether he can safely store it for a period until the market improves or had best dispose of it at the earliest opportunity to prevent further deterioration. Presence of moisture promotes the growth of destructive molds on the copra which rapidly lower the oil content.

Inspection and grading of rice, beans, peas, etc., enables the importer to ship with certificate attached to bill-of-lading showing variety, size, moisture content and condition as to vermin or mold. In cases of damaged shipments the chemists services are in demand to determine cause, extent and probable time of such damage.

Coffee, tea, cocoa and spices are all subject to government regulations and compliance with such regulations can only be assured by the results of chemical analysis as to content of fat, moisture, ash, etc.

Pig tin and antimony, manganese and tungsten ores are of necessity sold on certificate of analysis showing content of the metal in question and also the presence or absence of detrimental impurities.

These foregoing are some of the imports the movement of which is facilitated by inspection and chemical analysis. As the imports from the Orient become more extensive and varied and specifications become more clearly defined the service the chemist can render will increase in importance.

# Foreign Business Opportunities

The Foreign Department of the First National Bank is prepared to secure for its customers the best available credit information and data regarding foreign trade conditions and the opportunities in that field.

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# The Salmon Industry

Statistics compiled for 1918 show a decrease in the amount of canned salmon exported as compared to the shipments in the year previous, but higher prices commanded by the product resulted in a large increase in the value of the exportations. The number of pounds exported were 110,042,480, the value of which was \$16,570,884. In 1917 exports totalled 117,762,807 pounds, valued at \$12,963,425. The leading importers of salmon from this country were as follows: United Kingdom (48,264,221 lbs., \$7,277,261); Canada (12,184,077 lbs., \$1,755,690); Australia (7,397,009 lbs., \$1,337,231); Philippine Islands (5,558,796 lbs., \$618,697); Chile (2,304,499 lbs., \$330,244); Mexico (1,800,135 lbs., \$246,830). Exportations to other countries aggregated 33,551,743 pounds, bringing \$4,704,881.

In the value of its products salmon canning is exceeded on the Pacific Coast of the United States by one industry only, the lumber business. Yet in proportion of the value of its product, far more money is spent in the process of production in the salmon canning than in the lumber business. As an example of the various ways in which the salmon canning industry helps other business, it might be mentioned that the supplying of the timber for the boxes which hold the salmon pack returns to the lumber industry \$1,000,000 per year. About 3,000,000 pounds of pig lead and the same amount of pig tin are required annually for the cans in which the salmon is packed. Directly the salmon canning industry employs 30,000 people; indirectly it employs additional thousands who are engaged in the production of the supplies which the business must have. Over \$30,000,000 per year is spent in the production of canned salmon on the Pacific Coast.

There is no effect without a cause, and the reason for the rapid and continued growth of the salmon industry is that canned salmon contains a greater amount of food elements than any other product of the animal or vegetable kingdoms. People in all countries are realizing more and more every day that canned salmon is the cheapest food known to humanity. The yearly increase in the exportation of canned salmon from Seattle, San Francisco and other Pacific coast ports show its growing popularity among the people of other nations.

#### Five Grades of Salmon

Salmon is canned in three sizes or styles of packages: One-pound talls, one-pound flats and one-half-pound flats. However, the shape of the can does not signify any particular grade or quality of fish. There are five grades or kinds of salmon taken on the Pacific Coast.

Spring salmon, King salmon, Chinook salmon and Quinault salmon belong to the same class and are known and labled Spring and Tyee on Puget Sound, Kings in Alaska and Chinook on the Columbia River, and Quinault in other places. The flesh of this class is pale to deep pink and is of a fine flavor. A very curious and interesting fact has been noticed regarding the color of the flesh of the spring salmon. In some individuals the flesh is red and in others almost white. This peculiarity has given rise to the terms "red springs" and "white springs." The average weight is 35 pounds, and the run varies from early spring to late fall. King salmon is caught in Alaska, the color varies from light pink to a fair red. The flesh is firm in texture, and fair oil. Average weight, 65 pounds. Runs from June to September. Chinook is caught in the Columbia River. Runs from April to September, average weight, 30 pounds. Deep red color, extra rich in oil, finest flavor. Considered the finest grade of salmon, but the quantity is limited.

Sockeye, Blueback, Reds and Alaska Reds are another class of salmon and labeled in the trade under the respective names. The average weight of this fish is four pounds to six pounds, the flesh is firm, rich deep red in color, excellent oil, fine flavor. Sockeye caught in Puget Sound and Fraser River, runs from June to August. New pack available for shipment in July. A peculiar feature of this species is that there is a marked quadrennial periodicity in the run. The maximum run occurs the year following leap year, the minimum run the year following that. The next maximum run occurs in 1921. Alaska reds are caught only in Alaska. Runs from June to August. New pack available for shipment in September.

Cohoe or Silver salmon are known in the trade and are labeled Medium Reds, Silver-sides and Cohoe. As a food fish this class occupies a high rank. The flesh is less firm than the other grades and rather pale in color, but the flavor, however, is excellent, and only the pale color keeps it from ranking with the best. New pack available for shipment in September.

Humpback salmon, usually labeled Pinks, is the smallest and a most prolific salmon. On Puget Sound the run in packing quantities occurs only every other year—the odd

#### **CANNED SALMON EXPORTS FROM THE UNITED STATES**

	190	09 .	19	10	19	11	19:	12	19:	13
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Europe	23,028,476	\$2,207,194	44,765,898	\$4,712,182	22,134,328	\$2,408,708	19,545,720	\$2,183,982	25,408,154	
N. Amer.	2,209,405	198,043	2,224,516	191,551			3,411,176		4,271,710	370,823
S. Amer	1,461,662			226,197						
Asia	1,386,702						1,702,426		3,593,538	
Oceanica.	7,383,494	705,204								
Africa	647,370	62,911	510,871	52,593			787,479	79,238	463,403	39,417
Total	36,117,109	\$3,416,436	63,860,696	\$6,314,258	38,006,799	\$4,037,142	43,423,756	\$4,620,563	55,290,966	\$5,103,340
_										
	19:	14	19:	15	19	16	19:	17	19	18
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
	10.010.000	00 000 170	63,760,758	\$7 110 728	114.163.722	\$11,648,003	82,758,887	\$9,390,858	70.092,226	\$10,692,246
Europe	62,862,328	\$6,026,170	03,700,738	W1,110,120						
Europe N. Amer.	62,862,328							1,565,409		
			4,328,246 1,301,962	370,444 107,783	12,322,259	1,056,904	16,196,177	1,565,409	16,840,112	2,413,649
N. Amer.	6,907,615	511,545	4,328,246 1,301,962	370,444 107,783 97,662	12,322,259 4,563,993 3,336,665	1,056,904 332,024	16,196,177 3,314,969	1,565,409 305,964	16,840,112 4,899,692	2,413,649 706,757
N. Amer. S. Amer. Asia Oceanica.	6,907,615 3,472,438 2,875,995 12,089,003	511,545 233,675 180,402 1,017,994	4,328,246 1,301,962 1,135,793 12,100,414	370,444 107,783 97,662 1,309,376	12,322,259 4,563,993 3,336,665 17,659,036	1,056,904 332,024 268,306 1,646,962	16,196,177 3,314,969 1,326,163 12,037,857	1,565,409 305,964 142,641 1,312,394	16,840,112 4,899,692 2,199,024 13,824,362	2,413,649 706,757 361,322 2,096,439
N. Amer. S. Amer. Asia	6,907,615 3,472,438 2,875,995	511,545 233,675 180,402	4,328,246 1,301,962 1,135,793 12,100,414	370,444 107,783 97,662 1,309,376	12,322,259 4,563,993 3,336,665 17,659,036	1,056,904 332,024 268,306 1,646,962	16,196,177 3,314,969 1,326,163 12,037,857	1,565,409 305,964 142,641 1,312,394	16,840,112 4,899,692 2,199,024 13,824,362	2,413,649 706,757 361,322 2,096,439

These figures are for fiscal year ending June 30.



years—the only place on the Pacific Coast where such is the case. The next Puget Sound run occurs in 1921. Although as a canned product not ranking as high as the other varieties, Humpback or Pink salmon is a delicious article, palatable, very nutritious and thoroughly wholesome in every way. New pack available for shipment in July.

Chum Salmon: This species does not lend itself readily to canning, the flesh being somewhat soft and spongy; however, when smoked and salted the fish takes

a high rank. Available for shipment in September.
The following are the markets in which the different

species of salmon are consumed:

The Quinault, Tyee, Chinook or King salmon, principally the United States.

The Red, Blueback or Sockeye, throughout the world. The Cohoe, Medium Red or Silverside, principally the United States, although of recent years it has been selling in England.

The Humpback or Pink, principally the United States; some in Australia, South and Central America and the Orient; also of recent years to England in limited numbers.

The Chum or Keta salmon, United States,

#### Food Value of Canned Salmon

Prof. W. O. Atwater, the late eminent chemist of the U. S. department of agriculture whose investigations of the food value of certain products has made his name a household word throughout the world, reports the following as the relative food values of canned salmon as compared with other foods:

Sirloin Steak 16.5 Sugar-cured Ham 14.2 Sugar-cured Ham 14.2

Macaroni 13.4

Eggs 13.1

Spring Chicken 12.0

White Bread 09.0

On March 7, 1914, the U. S. bureau of fisheries, of the Department of Commerce, issued Economic Circular No. 11, entitled "Canned Salmon: Cheaper than meats and Why. Including fifty tested Recipes." In this circular, which is highly laudatory of canned salmon the Bureau which is highly laudatory of canned salmon the Bureau

which is highly laudatory of canned salmon, the Bureau has the following to say about the cheapness of canned salmon as compared with other foods:

"The cheapest food is that which supplies nutriment at the lowest cost. One pound of canned Red salmon of the best quality will cost about 16 cents. The same quantity of bone, muscle, blood and brain building material and body fuel in other foods would cost—

Eggs, strictly fresh (at 34c a dozen), 36c. Steak, sirloin (at 27½ per pound), 33c. Mutton, leg (at 19c per pound), 32c. Chicken average (at 25c per pound), 21½c. Ham, smoked (at 18½c per pound), 13¾c. Pink salmon, canned (at 9c per can), 121/2c

\*"The prices used in all cases are average retail prices in Washington, D. C., Feb. 10, 1914, in shops and markets where all of the products were for sale. They are, therefore, comparable. Where salmon costs more, other prices will probably be greater."

#### Shipping Salmon

Shipping: Practically all salmon is packed in the months of June, July, August and September, and shipping takes place generally during the months of August, September and October. From all the leading North American ports on the Pacific there are lines with direct connections with foreign ports. It is nearly always possible to book space within a period of thirty days, although at rare intervals it may be that one cannot make satisfactory bookings

under 60 days.
Finances: The usual method of operating the small quantities that are shipped to foreign countries is by 30 to 60 day draft on the customer, bill of lading attached, and to most of the ports in the Pacific that enables the salmon to practically arrive at its destination prior to payment, or payment at the time of arrival. On orders for large blocks of salmon it has been customary to open a letter of credit for the amount of the invoice.

#### Marking of Sockeye Salmon

The tagging of Sockeve salmon on Puget Sound and contiguous waters was conducted during July and August, 1918 under the immediate direction of Henry O'Malley, field assistant of the Fisheries Service. The run of this species last year was very light even for an "off" year. Five marking stations were established along the route of the migrating salmon, the most western being at Sooke, on Vancouver Island, British Columbia. About 4,400 fish, obtained in traps, were tagged and liberated; and up to the middle of August over 600 of the tagged fish had been reported as recaptured.

This work has attracted unusual interest and should furnish valuable definite information of a character never before obtained. The data afforded by the returned tags are now being compiled.

# Simmie & Grilk

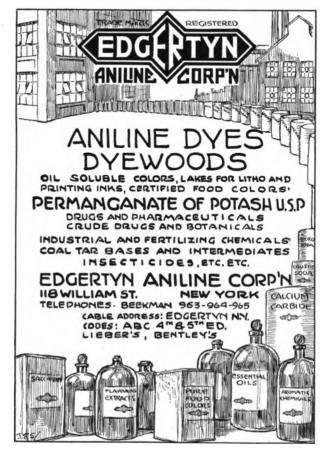
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# Opportunities for Americans at Port of Shanghai

The past 25 years have witnessed a notable progress at Shanghai and in China the foundation upon which the port is built. Measured year by year, China's awakening and accompanying progress seems slow to the western observer. It may be noted, however, that the country is advancing at an accelerating rate. It is con-servative, therefore, to predict much greater progress during the next twenty five years, present domestic disturbances notwithstanding. As the late J. Pierpont Morgan is quoted as saying of America, "Play the Bull market and in the long run you are bound to win."
Clina's awakening has only begun, the business of the country must double and double again and again. In-market and in the long run you are bound to win," sooner or later. With this message there are submitted a few Shanghai opportunities that appear good enough to warrant looking into.

In connection with American Steamship Lines to establish and operate a well equipped Sino-American Towage and Lighterage concern.

In connection with American Transpacific Steamship Services to establish a Sino-American System of River and Coasting Lines as feeders and distributers.

Organize a Sino-American Wharf and Godown Company and construct and operate a large modern marine terminal. It might prove advantageous to develop such a project along "Bush Terminal," lines modified to meet China requirements.

Organize a Sino-American Shipbuilding and Drydock Company and construct and operate a large modern shipbuilding, repairing and dry docking establishment together with a steel fabrication plant.

Organize a Sino-American Coal and Fuel Company for the purpose of acquiring or controlling sources of coal production and to erect and operate at Shanghai a modern coal storage and fuel supply plant.

Particular attention is directed to these opportunities for the reason that if grasped American prestige and trade in China and the Far East would be greatly advanced thereby and China would be materially benefited.

A factor not fully appreciated by Americans is the severe competition that exists in China; not so much between firms, keen as that is, as between national groups. For instance a British or Japanese Wharf or lighterage company looks after its national interests above those of others first and all the time. Likewise take the case of an American firm at Hankow, there not being an American line of Yangszte River steamers, it is dependent upon those of other nationals. The offerings of the nationals of the steamer company are first taken care of and the American comes in only if there is space left.

In case Transpacific freight competition is rather keen it can not get its shipment moved unless it contracts to forward on an ocean line of the same flag as the river company. Thus the American Transpacific line is shut out of business that would naturally go to it by preference. The same holds good in the coasting services in

which America is not represented.

The point is: Americans must control all the links in the transportation chain from the out port, in the handling, warehousing and transhipping Shanghai-tothe-Pacific-Steamer and to the American Port. sequently the list of trade opportunities given are of national import as well as being openings for individual enterprise.

It is suggested that Chinese capital be invited to cooperate out of fairness to China and for the reason that Chinese good will and support would be gained thereby.

It is believed that if the propositions are carefully conceived and properly handled Chinese capital will be readily forth coming, up to forty per cent in some

These opportunities are matters that interested parties should investigate thoroughly but quietly. To get acquainted with the situation, make connections with the right people among the Chinese and to acquire necessary properties, etc., at the best probably will require not less than a year's time in the hands of the most capable men available.

#### Facts Concerning the Port

It is the premier port and chief gateway to China, through which Central and Northern China points can be most conveniently reached. Its foreign trade is close to one-half that of all China,

It is international in character. Its special hinterland is the Yangszte basin equivalent to the combined area of the States of New York, Connecticut, Rhode Island, Delaware, Pennsylvania, West Virginia, Ohio, Indiana, Illinois, Michigan, Wisconsin and portions of Missouri, Iowa, Minnesota, North and South Dakota and Montana

In variety and wealth of resources its hinterland corresponds to that of the States named.

As in the case of New York, Shanghai participates in the trade of an entire nation, equaling in area the continental United States, with a population over three times as large.

It is the center of the Central and North China coast and Yangszte River water borne commerce.

It is approximately on the line of the great trade routes from America and Europe that meet in the China

It is a river port situated near the mouth of the Yangszte, a great traffic artery penetrating the heart of China.

It is the center of a vicinity population approximating six millions. The approach channels permit the call of vessels of about 16 ft. draft low water and 28 ft. draft at ordinary high water, springs.

The Whangpoo channel leading from Woosung to the City, a distance of about 12 miles, has a minimum low water depth of 24 ft. and a high water depth of from 30 to 36 ft.

The Woosung anchorage is sufficiently deep to accommodate vessels of 40 ft. draft at low water.

The upper harbor anchorages will accommodate vessels up to 34 ft. draft at low water.

Wharf berthage is available for vessels of 30 ft. draft at low water.

The wharf and warehouse facilities are privately owned, principally by trading and transportation companies operating them in their own behalf. concerns furnish wharfage and storage facilities to their



A limited amount of public wharf and warehouse facilities is available.

It is advisable that American Steamship Lines acquire their own terminal properties.

The advantageously situated water front property is being acquired rapidly and taken off the market.

The port lighterage, stevedoring, dockage and wharfage charges are rather high, but not excessive.

The cost of handling a ship in and out and working her cargoes can not be stated accurately, but it is approximately \$1.00 gold per ton, a little in excess of some other Oriental ports.

The big mail liners usually stop at Woosung anchorage.

Many of the larger vessels work cargo to and from lighters in stream.

The port has a large warehouse capacity, little of which is open to business other than that of the trading or transportation companies owning or controlling the facilities.

In the matter of towage, lighterage, wharf, warehouse and river and coasting steamer facilities, national lines are quite definitely, though not absolutely, drawn. Nationals, without such facilities under their own flag, operate against an effective handicap.

Shanghai is well equipped with ship repairing and dry docking facilities. Transpacific steamers up to the intermediate size may be accommodated at the dry docks.

Shanghai is a modern city quite favorably comparable to similar ports in America and Europe. It is an important and growing industrial center.

American activities in the port are growing, but still lag behind those of the other principal trading nations.

#### Ship Repairing Facilities,

The port of Shanghai is well equipped with facilities for repairing and outfitting ships. There are ample dry docking facilities for local, river and coastwise steamers and for deep sea vessels up to the intermediate size. The ship building yards and dry docks are either Chinese or British owned.

With renewed activities following the war that will call into service larger vessels, a need for more commodious dry docking facilities will arise. Apparently there is an opportunity for some energetic American ship builder to establish a plant and dry dock, providing he is not too slow about it. The cheap, and under proper direction, very satisfactory Chinese labor, makes it possible to ship the steel to China and build cheaper than elsewhere.

#### Railways

China has only begun the construction of its railway system. The Shanghai-Nanking and the Shanghai-Hangchow, both Chinese Government Lines, are comparatively short railways but will eventually become terminal sections of continental lines. By means of the Nanking-Pukow ferry, the Shanghai-Nanking Railway now forms a part of a through line to Peking, approximately 1,000 miles from Shanghai.

In spite of several attempts, Americans have failed to participate in the railway construction of China. One American company now holds a contract for extensive railway construction and it is hoped that America will play a more important role in China's development in the future. Americans are favored by the Chinese above other nationalities.

# GEOGRAPHICAL PLACES Table of Geographical Places—Names as Spelled in English, French, German and the Native Language

Note: In countries where the Roman Alphabet is not in use the native spelling is not shown.

not in use th	e native spelli	ng is not sho	
English	French	C	Native Language
Antwerp	Anvers	German Antwerpen	Anvers
Athens	Athenes	Athen	71114013
Australia	Australie	Australien	
Austria-	Autriche-	Oesterreich-	
Hungary	Hongrie	Ungarn	
Belgium	Belgique	Belgien	Belgique
Bremen	Breme	Bremen	
Brussels	Bruxelles	Brussel	Bruxelles
Christiania	Kristiania	Christiania	Kristiania
Cologne Copenhagen	Cologne	Koln	Kjobenhavn
Denmark	Copenhague Danemark	Kopenhagen Danemark	Danmark
Dover	Douvres	Dover	Danmark
Dresden	Dresde	Dresden	
Edinburgh	Edimbourg	Edinburgh	
England	Angleterre	England	
English	Manche	Der Kanal	
Channel			
Florence	Florence	Florenz	Firenze
Flushing	Flessingue	Vliessingen	Vlissingen
France	France Francfort	Frankreich	
Frankfort Geneva	Geneve	Frankfurt Genf	
Genoa	Genes	Genua	Genova
Germany	Allemagne	Deutschland	Genera
Ghent	Gand	Gent	Gand
Great Britain	Grande	Gross-	
	Bretagne	brittanien	
Greece	Grece	Griechen-	
		land	
Hamburg	Hambourg	Hamburg	
Hanover	Hanovre	Hannover	Moderland
Holland	Pavs-Bas Irlande	Niederlande Irland	Nederland
Ireland Italy	Italie	Italien	Italia
Lisbon	Lisbonne	Lissabon	Lisboa
London	Londres	London	
Lyons	Lyon	Lyon	
Marseilles	Marsaille	Marseille	
Milan	Milan	Mailand	Milano
Moscow	Moscou	Moskau	
Munich	Munich	Munchen	NT11
Naples	Naples Navvelle	Neapel Neu-	Napoli
New Zealand	Zelande	Seeland	
Norway	Norvege	Norwegen	Norge
Orkney	Is. Orcades	Orkney In	Morge
Islands		,	
Philadelphia	Philadelphie	Philadelphia	
Pittsburg	Pittsbourg	Pittsburg	
Prague	Prague	Prag	Prag
Prussia	Prusse	Preussen	
Rhine	Rhin	Rhein	ъ
Rome	Rome	Rom	Roma
Russia	Russia Ecosse	Russland Schottland	
Scotland Spain	Espagne	Spanien	Espana
Sweden	Suede	Schweden	Sverige
Switzerland	Suisse	Schweiz	D. 01.180
Thames	Tamise	Themse	
The Hague	la Haye	Haag	S'Graven-
			hage
Turkey	Turquie	Turkei	
United States	s Etats-Unis	Vereinigte	
Wi.	Vania -	Staaten	Vanazia
Venice	Venise Vienne	Venedig Wien	Venezia Wien
Vienna Wales	Galles	Wales	44 1011
Warsaw	Varsovie	Warschau	
			ъ т

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# Trans-Pacific Freight Rates

On March 1st the United States Shipping Board put in effect the following rates:

#### From United States North Atlantic Ports to

	Close weight	All other
	cargo	cargo
Japan, Kobe Yokohama	\$20.00	\$25.00
China, Hongkong, Shanghai.	20.00	25.00
Philippine Islands, Manila	20.00	25.00
Straits Settlement, Singapore	20.00	25.00
French Indo China, Saigon (s	ee note) 20.00	25.00

NOTE:—Rate applies only when steamer is available for direct sailing for Saigon; otherwise freight is accepted subject to trans-shipment at Singapore at additional rate of \$10.00 per ton of 2,240 lbs. or 40 cubic ft. at ship's option.

	All cargo
Dutch East Indies	\$40.00
Russia, Vladivostok	40.00
All cargo per ton of 2.240 lbs, or 40 cubic f	t. at shin's

option.

Heavy Lift Scale.—Above rates apply on pieces and/or packages weighing up to 4,480 pounds weight each. For pieces and/or packages in excess of 4,480 pounds each, an additional charge of \$2.00 will be made for each ton over two tons.

#### Extra Length Scale, for Pieces Over 30 Feet Long

40 to 50 feet	
and the following from East:	Pacific Coast Ports to the Far All cargo

	Per ton 2,000 lbs.	Per 40 cu. ft
Japan-China	\$12.00	\$14.00
Manila	12.00	14.00
Exceptions:-		
Gasoline	17.00	19.00
High explosive	s and	
dvnamite	24.00	28.00
Lumber	25.00 per 1,0	000 ft. B. M.
Vladivostok	25.00	25.00

The above rates are based on per ton of 2,000 lbs. or 40 cubic ft. ship's option.

These rates are not applicable on bookings made prior to announcement.

Above rates apply on pieces and/or packages weighing up to 4,480 lbs. weight each. For pieces and/or packages in excess of 4,480 lbs. each, customary heavy lift scale to be added.

#### From United States North Atlantic Ports

To India:—	All cargo stowing under 40 ft. Per 100 lbs.	All cargo stowing 40 ft. and over Per cubic foot
Karachi, Bombay, Color	nbo,	
Calcutta	\$ 1.00	<b>\$</b> 0.60
Madras, Rangoon	1.20	.65
Red Sea Ports:-		
Port Said, Hodeida, Ad	len. 40,00 I	Per ton of 2,240
Exceptions:-	1	bs. or 40 cubic
Cartridges Minimum per c	\$	• •
Case oil		Special Special

Above rates apply on pieces and/or packages weighing up to 4,480 pounds weight each. For pieces and/or packages in excess of 4.480 pounds each customary lift scale to be added, and each pieces and/or packages not to exceed 30 feet in length.

Minimum bill of lading charge \$7.50.

Parcel receipts \$1.50 per cubic foot-minimum charge \$3.00 on shipments valued under \$10.00.

The above rates do not apply on dangerous or hazardous cargo.

From United States North Atlantic Ports to Australia and New Zealand:

Naked weight	cargo	\$15.00
Packed weight	cargo	18.00
Rough general	cargo	25.00
Fine general ca	argo	30.00

All per long ton weight or per ton of 40 cubic ft. ship's

A tariff from Pacific Coast ports to Atlantic Coast ports was also published, but the tariff is too voluminous to show in this article.

The rates from the Atlantic and the Pacific to Oriental ports of call were generally accepted by other than Shipping Board vessels as maximum rates, although the idea of placing all weight cargo in one class and measurement in another without regard to valuation, risk incident to handling, or market conditions has not prevailed in the past and to some appears to be contrary to good business procedure. No doubt in the near future readjustments more in accordance with trade conditions and requirements will be made.

Upon the establishment of the rates named above it became apparent that freight originating in the Central and Eastern states could not be shipped by the way of the Pacific ports and that the Western railway systems as well as the ocean carriers serving Pacific ports would suffer the loss of traffic which had resulted from years of study and cultivation and the Railway Administration published a tariff of proportional rates from all territory east of the Missouri River to the Pacific Coast which will enable the Western Lines to secure some of the traffic which otherwise would pass through the Panama Canal. The Shipping Board has not placed any restrictions upon the homeward rates except on business from the Philippines and it is understood that agents at foreign ports are booking for Shipping Board vessels at competitive rates, which are in a very unsettled condition on account of the scarcity of cargo, there being insufficient offerings to satisfy any considerable portion of tonnage available. The Railway Administration is now compiling a tariff of Eastbound proportional rates which will be necessary to enable the Pacific Lines to work on a parity with those operating via the Panama Canal.

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Branch Offices: Tokyo, Japan

2 RECTOR ST., **NEW YORK** Santiago, Chile Cable Address, Zenkosha, New York

Nautical

M:100

# Distance Tables

From

The statute mile is 5,280 feet. The British Admiralty knot or nautical mile is 6.080 feet.

The statute knot is 6,082.66 feet, and is generally considered the standard. The number of feet in a statute knot is arrived at thus: The circumference of the earth is divided into 360 degrees, each degree containing 60 knots or (360x60) 21,600 knots to the circumference; 21,600 divided into 131,385,456—the number of feet in the earth's circumference—gives 6,082,66 feet, the length of a knot or nautical mile.

#### Reduction of Nautical Miles to Statute Miles

Miles	Stat. Miles
	115 <b>.1553</b>
	103,6398
	92.1242
	80.6087
	69.0932
	57.5776
•	46.0621
	34.5466
	23.6311
	11.5155
	10.3640
	9.2124
	8.0609
	6.9093
	5. <b>757</b> 8
	4.6062
	2.4547
	2.3031
	1,1515
	Miles

#### ALASKA AND B. C.

#### Distances from Seattle

Powell River, B. C	177
Prince Rupert, B. C	567
Ketchikan	657
	746
· · · · · · · · · · · · · · · · · · ·	789
B	R98
B. a.c	
	900
	903
Thane	905
Haines	991
Skagway10	005
Hoonah	968
Sitka (via Juneau)	148
	750
	775
	783
2.020 2	
	809
<b></b>	822
	328
	351
Tokeen {	382
Holbrock	382
Port Conclusion	947
2 O.C. Conclusion	147
	997
Sitka (via West Coast)10	170

#### TABLE OF DISTANCES

Mautical

From	To	Miles
Seattle	Powell River	177
Prince Pupert	Prince Rupert Ketchikan	390 
Ketchikan	Wrangell	
Wrangell	Petersburg	43
Petersburg	Douglas City	109

riom	10	141 1	162
Douglas City	Juneau		2
	Treadwell		3
	Hoonah		65
Hoonah	Haines		86
Haines	Skagway		14
Skagway	Sitka		175
West Co	ast Prince of Wales I	sland	
Seattle	Ketchikan		657
	. Hydaberg		93
	. Howkan		25
	Rose Inlet		8
	Waterfall		26
	Craig		13
	Klawack		6
	Hecate		23
	Tokeen and Holbro		31
Tokeen	. Pt. Conclusion & Pt.	Armstrong	55
	Tyee		50
	Sitka		99
•			

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#### From Port Townsend To Seattle ............... 38 Victoria ............ Tacoma ..... 64 Vancouver ..... Bellingham ...... 44 Everett .....

# From Portland, Ore., To Hawaiian Islands 2,370 Yokohama, Japan 4,255 Shanghai, China 5,063 Hongkong, China 5,719 Manila, P. 5,969 Sydney, Australia 7,394 Melbourne, Australia 7,975 Adelaide, Australia 8,487 Auckland, New Zealand 6,256 Balboa, Panama Canal Zone 3,869 Callao, Peru, S. A. 4,637 Valparaiso, Chile, S. A. 5,790 Vladivostok, Siberia 5,377 Sitka, Alaska 965 Unalaska, Alaska 1,919 San Francisco, California 722 New York via Panama Canal 5,912 Liverpool via Panama Canal 8,637 Hamburg, Germany, via Panama Canal 9,005 Hawaiian Islands...... 2,370

Note: To give the distance between each important port on the Pacific and all other important ones would require an endless array of tables. In the following tables we give a sufficient number of distances to enable a reader, with the assistance of a map, to figure out for two places. For instance, the distances between Victoria, B. C., Vancouver, B. C., Seattle and Tacoma, on Puget Sound, and foreign ports are not given. In stead are given the distance between the foreign ports and Port Townsend, in the Straits of Juan de Fuca. To find the distances to the four ports mentioned add to the trans-oceanic mileage the distance between them and Port Townsend.

Another example: If you desire to find the distance between Yokohama and Valparaiso a glance at the map will show you that the Samoan Islands lie on an almost straight line between them. One of the table almost straight line between them. One of the tables shows that the mileage from Yokohama to Apia, the chief port of Samoa, is 4,057 and that from Valparaiso to Apia is 5,451, and the desired mileage is therefore 9,508.

The distances given herewith are in nautical miles and were corrected by the U.S. Hydrographic Service up to the first of January, 1917.

То	From San Fran- cisco	From *Port Town- send	From Hono- lulu	То
Yokohama	4,536	4,217	3,394	Yokohama
Kobe	4,808	4,500	3,665	Kobe
Shimonoseki	5,008	4,689	3,851	Shimonoseki
Nagasaki	5,151	4,832	3,976	Nagasaki
Hakodate	4,209	3,915	3,311	Hakodate
Petropavlovsk	3,292	2,905	2,762	Petropavlovsl
Vladívostok	4,664	4,138	3,725	Vladivostok
Chemulpo	5,329	4,995	4,385	Chemulpo
Port Arthur	5,477	5,143	4,524	Port Arthur
Taku	5,630	5,296	4,677	Taku
Chefoo	5,436	5,102	4,483	Chefoo
Weihaiwei	5,402	5,068	4,449	Weihaiwei
Shanghai	5,387	5,053	4,330	Shanghai
Foochow	5,683	5,364	4,487	Foochow
Amoy	5,796	5,477	4,586	Amoy
Swatow	5,900	5,581	4,688	Swatow
Hongkong	6,049	5,709	4,857	Hongkong
Canton	6,132	5,814	4,940	Canton
Manila	6,221	5,931	4,767	Manila
Cebu	6,146	5,870	4,610	Cebu
Iloilo	6,168	5,892	4,632	Iloilo
Singapore	7,353	7,034	5,881	Singapore
Batavia	7,641	7,323	5,934	Batavia
Colombo	8,943	8,624	7,471	Colombo
Guam	5,053	4,913	3,337	Guam
Honolulu	2,091	2,366		Honolulu
Pt. Townsend	770			Pt. Townsend

#### \* Port Townsend is the first port within the Straits of Juan de Fuca. To complete the above distances to British Columbia and Puget Sound ports add the mileage between Port Townsend and such ports which will be found in other tables presented herewith.

<del></del>				
		igellan ait	By C. Horn	By Pana- ma
Ports	Full Powered Steam Vessel	Auxil- iary Steam Vessel	Sailing Vessel	Full Powered Steam Vessel
Melbourne to New		<u> </u>		
York	12,891	13,120	13,760	9,945
Sydney to New York.	12,779	13,050	13,750	9,691
Wellington to New York	11,344	11,850	12,550	8,522
York	8,380	8.680	9,400	4,623
San Francisco to New	0,000	0,000	2,700	4,023
York	13,135	14,670	15,420	5,262
Port Townsend to	1	.,	10,.20	0,202
New York	13,873	15,350	16,080	6,002
Honolulu to New York.	13,312	14,170	14,970	6,702
New York to Val-				
paraiso	8,380	9,130	9,420	4,633
New York to San Francisco	12 125	15 250	15 660	F 000
New York to Port	13,135	15,350	15,660	5,262
Townsend	13,873	16,000	16,310	6,002
New York to Hono-	10,0/0	10,000	10,510	0,002
lulu	13,312	14,650	15,480	6,702

#### From Magdalena Bay To

San Francisco	1,002	Panama	2,265
San Diego	600	Callao	3,008
Acapulco	853	Honolulu	2,543

#### Norwegian and Chinese Miles

The Norwegian mile is the longest-12,182 yards. The shortest is the Chinese-some 600 yards.

#### Between North and South American Ports and The Islands of the Pacific

	Port Town- send	San Fran- cisco	Pana- ma	Callao	Val- paraiso	Puenta Arenas
Auckland	6,134	5,680	6,512	5,834	5,247	4,631
Marshall Is.	4,259	4,150	6,666	6,832		6.815
Unalaska	1,670	2,051	5,245	5,989	7,139	8,063
Caroline Is	5,346	5,501	8,430	8,720	8,647	8,073
Solomon Is.	5,310	5,129	7,248	7,047	6,805	6,280
Tongatabu	5,061	4,628	5,953	5,582	5,360	4,978
Tahiti	4,260	3,660	4,485	4,192	4,254	4,233
Hervey Island.	4,665	4,124	5,095	4,733		4,429
Pelew Islands.	5,587	5,751	8,674	8,906	8,707	8,112
Union Islands	4,345	3,957	5,688	5,557	5,606	5,425
New Caledonia	5,729	5,410	6,982	6,541	6,115	5,527
Gilbert Group	4,395	4,185	6,439	6,470	6,568	6,318
New Hebrides	5,344	5,086	6,956	6,694	6,401	5,885
Midway Is	2,781	2,792	5,707	6,280	7,042	7,382
Marquesas	3,268	2,987	3,826	3,711	4,030	4,290
Fiji Islands	5,083	4,705	6,288	6,002	5,753	5,342
Honolulu	2,366	2,091	4,685	5,161	5,920	3,670
Guam	4,913	5,053	7,988	8,372	8,510	8,026
Galapagos Is.	3,734	2,994	864	1,004	2,183	3,401
Ellice Island.	4,602	4,295	6,217	6,091	6,073	5,780
Marianas	4,585	4,779	7,797	8,332	8,719	8,363
Phoenix Is	4,012	3,657	5,599	5,597	5,777	5,690
Christmas Is.	3,344	2,894	4,752	4,873	5,267	5,441
Luzon	5,515	5,840	8,965	9,618	9,700	9,103
Apia (Samoa)	4.577	-4.161	5,710	5,492	5,451	5,207

### Between New Zealand, Australia, China and Japan Ports and the Islands of the Pacific

	Auck- land	Mel- bourne	Syd- ney	Hong- kong	Yoko- hama	Hako- date
Auckland Marshall Is. Unalaska Caroline Is. Solomon Is. Tongatabu Tahiti Hervey Island. Pelew Island. Union Island. New Caledonia Gilbert Group New Hebrides.	2,595 5,578 3,530 1,776 1,099 2,216 1,631 3,565	-			l -	date 5,099 2,670 2,229 1,989 3,347 4,531 5,022 2,156 4,025 4,176 3,155 3,725
Midway Is Marquesas Fiji Islands	3,937 2,980 1,175 3,820 3,497 5,654 1,729 3,867 2,169 2,799 4,556	4,697 4,454 2,274 4,942 3,631 7,067 2,697 4,044 3,308 4,093 4,607 2,834	4,138 4,045 1,779 4,420 3,067 6,816 2,177 3,440 2,794 4,043 2,355	3,728 6,483 4,574 4,857 1,822 8,938 4,247 1,723 4,627 5,270 504 4,869	2,250 5,270 4,015 3,394 1,353 7,414 3,468 939 3,616 4,042 1,388 4,057	2,198 5,293 4,271 3,311 1,741 7,168 3,692 1,315 3,761 4,086 1,716 4,252

A. M. APCAR & COMPANY tablished 1890 P. O. Box 70, Yokohama Cable Address: "APCAR YOKOHAMA" Established 1890 Export Dept. handles all lines of manufactured articles, Silks, Cotton Goods, Produce, Etc. Manufacturers of Boot and Shoe Laces, Locks of every description, and Bag Frames

From San Fi	rancisco South	From	Manila
Monterey     95       Santa Barbara     268       San Diego     452       San Blas     1,417       Guaymas     1,490       Acapulco     1,833       Salina Cruz     2,135       San Jose     2,395       Corinto     2,613       Panama     3,245       Esmaraldas     3,342       Guayaquil     3,514       Payta     3,523       Pacasmayo     3,688       Callao     3,987	Iquique 4,620 Antofagasta 4,762 Caldera 4,894 Coquimbo 5,007 Valparaiso 5,140 Concepcion Bay 5,270 Lota 5,282 Puenta Arenas 6,193  Note: The distance from San Francisco to Port Townsend is 770 miles. By making the necessary additions the distances to these southern ports from	Yokohama       1,757         Nagasaki       1,306         Vladivostok       1,912         Chemulpo       1,498         Port Arthur       1,573         Taku       1,726         Chefoo       1,532         Weihaiwei       1,498         Shanghai       1,162         Kobe       1,569         Hakodate       2,066         Foochow       787         Amoy       675         Swatow       623	Hongkong       631         Canton       714         Cebu       391         Iloilo       361         Shimonoseki       1,436         Petropavlovsk       3,112         Singapore       1,370         Batavia       1,559         Colombo       2,960         Guam       1,501         Honolulu       4,767         Port Townsend       5,931         San Francisco       6,221
Pisco 4,097 Mollendo 4,426	those in British Columbia and on Puget Sound can	From 1	Panama
Arica 4,551	be obtained.	Acapulco	Wellington 6,505 Puenta Arenas 3,943
From San Fr	ancisco North	Apia 5,710 Tahiti 4,486	Sydney
Point Bonita         7           Bolinas         16           Point Reyes         33           Point Tomales         46	Yaquina Bay 454 Cape Foulweather. 464 Cape Lookout 486 Tillamook Bay 499		ongkong 1060
Bodega Head         51           Point Arena         100           Mendocino         123	False Tillamook 511 Tillamook Head 523 Columbia River Bar 540	Canton       83         Manila       631         Cebu       960         Iloilo       895	Nagasaki       1,069         Hakodate       1,810         Petropavlovsk       2,938         Vladivostok       1,645
Shelter Cove 165 Point Gorda 184 Cape Mendocino 195 Cape Fortuna 200	Astoria	Singapore       1,454         Batavia       1,782         Colombo       3,044         Guam       1,822	Chemulpo       1,194         Port Arthur       1,265         Taku       1,418         Chefoo       1,224
Table Bluff         212           Humboldt Bay         216           Trinidad         233           Crescent City         274	Grays Harbor 588 Destruction Island. 634 Flattery Rocks 667 Cape Flattery 680	Honolulu	Weihaiwei       1,190         Shanghai       852         Foochow       459         Amoy       290
Cape St. George       276         Rogue River       313         Port Orford       336         Cape Blanco       341	Victoria, B. C.       750         Port Townsend       770         Seattle       804         Tacoma       830	Kobe 1,372 Shimonoseki 1,179	Swatow 183
Coquille River 360	Anacortes 796	From Midv	vay Islands
Cape Arago	Bellingham       810         Vancouver, B. C       833         Nanaimo, B. C       828	Yap (Caroline Is.)       2,751         Solomon Is.       2,612         Kusaie       1,773         Tongatabu       2,984	Marquesas       3,115         Levuka       2,833         Johnston Is       821         Honolulu       1,149
From V	adivostok	Tahiti	San Francisco 2,792 Petropavlovsk 1,831
San Francisco       4,664         Port Townsend       4,183         Honolulu       3,725         Guam       2,019	Swatow       1,495         Amoy       1,386         Kobe       810         Hakodate       431	Rarotonga       3,140         Raoul Is.       3,451         Port Lloyd       2,149         Ponape, Caroline Is.       1,882	Guam       2,301         Galapagos       Islands       5,313         Ellice       Is       2,220         Marianas       2,104
Colombo       4,593         Batavia       3,310         Singapore       3,003         Yokohama       949	Foochow       1,265         Shanghai       986         Weihaiwei       1,001         Chefoo       1,375	Port Townsend       2,781         Unalaska       1,653         Yokohama       2,250         Pelew       3,001         Union Is       2,272	Fakarawa Is.       3,246         Phoenix Is.       1,919         Christmas Is.       9,949         Luzon       3,350         Planet       12,269
Nagasaki       656         Iloilo       2,048         Cebu       2,026         Manila       1,912         Canton       1,728	Taku       1,229         Port Arthur       1,076         Chemulpo       928         Shimonoseki       566         Petropavlovsk       1,076	N. Caledonia 3,207 Gilbert Group 1,814 N. Hebrides 2,761 Marshall Is 1,542	Blanch Is.       2,688         Apia       2,546         Sitka       2,473         Vladivostok       2,612
Hongkong 1,465		From V	alparaiso
From Y	okohama	San Francisco 5,140	Callao 1,306
Kobe       346         Shimonoseki       544         Nagasaki       680         Hakodate       532         Petropavlovsk       1,425         Vladivostok       949         Chemulpo       1,033         Port Arthur       1,181         Taku       1,334         Chefoo       1,140         Weihaiwei       1,106         Shanghai       1,041         Foochow       1,217	Swatow       1,435         Hongkong       1,585         Canton       1,668         Manila       1,757         Cebu       1,762         Iloilo       1,784         Singapore       2,905         Batavia       3,194         Colombo       4,495         Guam       1,353         Honolulu       3,394         Port Townsend       4,217         San Francisco       4,536	Monterey       5,065         Santa Barbara       4,875         San Diego       4,738         San Blas       3,835         Guaymas       4,291         Acapulco       3,406         Salina Cruz       3,247         San Jose       3,024         Corinto       2,875         Panama       2,616         Esmeraldas       2,179         Gauyaquil       1,946         Payta       1,774         Pacasmayo       1,605	Pisco       1,207         Molendo       962         Arica       882         Iquique       782         Antofagasta       576         Caldera       376         Coquimbo       203         Puento Arenas       1,438         Wellington       5,064         Auckland       5,247         Apia       5,451         Tahiti       4,254         Honolulu       5,920
Amoy 1,331			

# Shipyards on the Pacific

#### Japan

#### Asano Shipbuilding Co.

One of the newest shippards in Japan is that of the Asano Shipbuilding Company at Tsurumi, near Yokohama. Work was started in July, 1916. The keel of the first hull was laid on the 11th of February, 1917, and the first completed hull launched July, 1917.

The shop buildings, fitting out basin, building berths, etc., cover an area of approximately two hundred and fifty acres. The shops and buildings now in use cover an area of approximately 30,000 square yards, while the fitting-out basin into which the ships are launched and in which they rest while being equipped is about the same size as the harbor at Honolulu. There are six reinforced concrete building berths, 600 feet long in use.

One great outstanding feature in the equipment of this yard, which is of particular interest to Japanese and foreigners alike, is the fact that all the heavy machines, with the exception of one or two, were made in Japan. They are of such size and capacity as to be able to handle any vessel up to 30,000 gross tons.

The transportation of materials throughout the yards and in the shops is accomplished by electrically driven apparatus. There are three electrically driven revolving tower cranes placed between every two alternate berths.

These cranes have arms of 105 to 115 feet sweep at a height of 150 feet above the ground and are so arranged that three of them in a row cover every part of the hull on both sides during construction. Transportation of materials in the yards and shops is provided by ten three-ton traveling cranes with 68-foot arms, which sweep over the stock as well as the fabricating yards. This department (the fabricating yard) is in the open air, where the keel bender, flanging machine, heavy plate rolling machines, joggling machines, hydraulic manhole punchers, etc., are situated.

Besides the above, there are three three-to-six-ton over-ead traveling cranes in the iron working shops. These head traveling cranes in the iron working shops. are arranged to bring in materials from the outside or to shift them from one place to another inside the shop. At the fitting-out wharf there is an eight-ton crane for loading engines and boilers into the hull. Thus it will be seen that at every point, care has been taken to secure the most modern time and labor saving devices known to the service of shipbuilding.

In addition to this great plant at Tsurumi, Mr. Asano has also acquired another at Osaka, the great industrial center of the Empire. This is known as the Osaka Kausani Iron Works. It has five building berths, which are equipped to handle ships of 2,000 to 3,000 tons, or a total of approximately 40,000 tons per year.

The first unit of this great plant is now complete and in active operation.

#### Hongkong

#### Kowloon Docks

The Kowloon Docks are situated in Hung Hom Bay, about two miles from Hon. They are in close proximity to the shipping in port and are well protected on all sides. The approaches to the docks are perfectly safe and the immediate vicinity affords capital anchorage. The docks are substantially built throughout of granite.

Powerful steam shears stand on a granite wharf, alongside which vessels can lie at any state of the tide to take in or out boilers, masts, etc.

The two patent slips are situated at Kowloon alongside the other docks.

The depth at low water spring tides, in the shallowest part of the bay in front of the docks is  $6\frac{1}{2}$  fathoms.

Cosmopolitan Dock is on the Kowloon side of the harbor and about the same distance from Blake Pier as the Kowloon Docks. The depth at low water spring tides,

in the shallowest part of the bay is 26 feet. The anchorage is good and the situation more sheltered from typhoons than any other in the port. The dock is substantially than any other in the port.

built throughout of granite.

A wharf with 20 feet of water alongside and powerful

shear legs are placed near to the dock entrance.

Aberdeen Docks are situated at the head of an inlet on the south side of the island. The entrance is quite safe and the anchorage excellent. The docks are substantally built throughout of granite.

The extensive workshops possess every facility and appliance necessary for the quick repairs of the heaviest

classes of ships and machinery.

The Blacksmith's shops are well furnished with powerful steam hammers, cranes, etc., capable of forging stern posts of the largest size and crank shafts up to 14 inches in diameter

The boiler maker's shop has special facilities for the construction of all classes of boilers.

The iron and brass foundries can deliver all descriptions of castings with the utmost dispatch.

The sawmill is equipped with a complete plant of wood working machinery of the most modern type.

The galvanizing plant is of the electrical deposit type and is capable of any class of work.

The stores: A large and well selected stock of all classes of materials, requisite in shipbuilding and repairing, is carried. Engine room outfits, furnishings and ship's stores of all descriptions supplied at lowest rates.

The powerful salvage steamer "David Gillies," fully equipped with salvage pumps, diving gear, etc., is ready for sea at the shortest notice.

#### Vancouver, B. C.

#### B. C. Marine, Ltd.

B. C. Marine, Ltd., was established in 1895; office and B. C. Marine, Ltd., was established in 1995; omce and plant located at foot of Victoria Drive. Innes Hopkins, managing director; J. K. McKenzie, director and super-intendent. A. B. C. Code used; area of plant, 1½ acres; average number of employes, 400; marine railway is 250 by 45 ft.; capacity, 2,000 tons; depth of water over blocks after end, 18 ft.; forward end, 14 ft.; the plant is equipped with the following facilities for repairs: Well equipped machine, boiler, forge, coppersmith, blacksmith, and pattern and joiner shops; ship carpenters and caulkers; 1 steam tug, 1 service launch, 1 12-ton floating derrick, 2 ships and the state of the ash barges, floats, etc., 2 complete diving outfits, 1 gasoline salvage pump, 1 duplex salvage pump, 2 service motor trucks, repair wharf with 15-ton derrick, portable oxyacetylene welding plants; floating air compressor plant; scows; submarine divers; Thermit welding.

#### Wallace Shipyards, Ltd.

Wallace Shipyards, Ltd., was established in 1898; office and plant located in North Vancouver, B. C. A. Wallace, managing director; H. J. Turney, secretary. A. B. C. 5th Edition, Bentley's and Western Union Code used. Plant No. 1, seven acres in area, and three building slips. Capacity of marine railways, 2,500 tons and 1,000 tons respectively; modern machines, boiler shop, forge and blacksmith shops, coppersmith and pipe shops, carpenter and joiner shops; 700 employes under normal conditions. Two 4,700 tonners built in 1918. On order, two 4,300 tonners and two 5,100 tonners.

#### J. Coughlan & Sons

J. Coughlan & Sons was established in 1900; head office in World Bldg., Vancouver, B. C. Location of plant, False Creek, Vancouver. John Coughlan, J. J. Coughlan, S. H. Coughlan, C. Coughlan, J. Lockhart, superintendent. Western Union, A. B. C. 5th Edition and Scott's codes used. Area of plant, 18 acres. Four building slips, 10,000-ton capacity; hull, engine and boiler works; 3,000 em-



ployes under normal conditions; six 8,800 tonners launched in 1918. Four 8,800 tonners building. Four 8,1000 tonners

The William Lyall Shipbuilding Co.

Established July 1, 1917. Head office address: Transportation Bldg., Montreal. Location of plant: North Vancouver, B. C. William Lyall, president; W. S. O. Cook, manager. Codes used: A. B. C. 5th Ed. Area of plant: 25 acres. Number and size of building slips: six 250 feet. Number of plants and size of building slips: six, 250 feet. Number of employes under normal conditions: 800. Ships launched in 1918, twelve; building,

Pacific Construction Co., Ltd.

Established 1907. Head office, Standard Bank Bldg., Vancouver; works, Port Coquitlam, B. C. Officers: J. L. Davidson, president; Stuart Cameron, vice-president; W. S. Lane, secretary; H. P. Simpson, general manager. Code used: A. B. C., 5th Edition. Area of plant, 15 acres; 1,600 feet waterfrontage on the Fraser River. Building slips: two for keels up to 325 feet; two for keels up to 450 feet. Outfit for handling repair work of wooden ships only at present. Number of employees of wooden ships only at present. Number of employees under normal conditions, 300. Three 2,800 ton wooden steamers built 1918. Others building for Greek firms.

# Northern Construction Co. (Formerly Western Canada)

Established June, 1917. Head office and works: Vancouver, B. C. A. R. Mann, president; C. V. Cummings, secretary. Codes used: A. B. C., Bentleys. Four building slips. Number of employees under normal conditions: 500. Built six 2,800 ton d. w. wooden steamers in 1918. Now on order, four 3,200 d. w. tonners for Belgium and five 1,500 d. w. tonners for France.

#### Victoria, B. C.

#### Yarrows, Ltd.

Yarrows, Ltd., was established in 1914; office address, P. O. box 1595, Victoria, B. C.; telegraphic address, Yarrows, Victoria; location of plant, Esquimalt, B. C.; Watkins, Scotts, A. I., A. B. C., 5th Edition, Slaters & Atlantic Cable Dir., and Bentleys codes used. Foreign Atlantic Cable Dir., and Bentleys codes used. Foreign representative is Yarrow & Co., Ltd., Glasgow, Scotland. Area of plant, 8½ acres; 1 building slip, 300 ft. by 50 ft.; 1 marine railway, 2,500 tons dead weight, 300 ft. by 50 ft.; vessels up to 480 ft. by 60 ft. docked in Government Graving Dock; lowest rates on Pacific Coast; excellent facilities for handling repair work: 250 employes under facilities for handling repair work; 250 employes under normal conditions; 1 60-ton shear legs; 1 10-ton floating derrick; one steel sternwheel steamer 165 ft. by 35 ft. by 7 ins. completed 1918 for India.

The Foundation Company of British Columbia, Ltd.

Head office and works: Victoria, B. C. Eastern office: Montreal. Cable address: "Underground." Built five 2,800-ton d. w. wooden steamers in 1918. Now building 20 twin-screw steamers, 3,000 ton d. w. for French Government; now operating yard, formerly known as Cameron-Genoa yard, as well as own plant.

Cholberg Shipbuilding Co.

Two building slips. Building nine 1500 ton d. w. motor schooners for Norwegian interests.

#### New Westminster, B. C.

New Westminster Construction & Engineering Co., Ltd. Shipbuilders and general contractors. Offices and works: Popular Island New Westminster, B. C. Manager, H. M. ton, Built four 2,800 d. w. wooden steamers in Building five 1,500 d. w. ton wooden vessels for Fullerton. French Government and three wooden vessels of 3,200 d. w. tons each for Belgian Government.

#### Bellingham, Wash.

#### Pacific American Fisheries

Pacific American Fisheries was established in 1905; head office address, South Bellingham; location of plant, Ft. Harris Ave. Armsby Code used. Four building slips; number of employes, 160. E. B. Deming, president and general manager.

#### Tacoma, Wash.

#### Todd Drydock & Construction Corp.

The largest shipyard and the only one constructing steel steamships in Tacoma. Employ 6,600 men. C. W. Wiley, head of the Todd interests in Seattle, is president, and J. A. Eves, vice-president and general manager. Company has a site of 105 acres, with eight ways. In 1918, eight vessels of 7,500 tons each were launched. Company has contracts for 18 merchant vessels for delivery in 1919, and these revenue cruisers for United States Covernment. and three revenue cruisers for United States Government. For repair work company operates a 12,000 d. w. tons floating drydock.

Foundation Co.

The Foundation Co.

The Foundation Company, Inc., established September 1, 1917. Has site of 100 acres, adjoining Todd yards on east side of harbor, with 10 ways, each 280 feet long. Bayley Hipkins, general manager. Output in 1918 was 20 wooden vessels, auxiliary schooners, for French Government. Employed 4,000 men. Company contemplates converting of yards for steel construction, using eight ways. Has immense contracts from French Government, continued the property ways. contingent upon U. S. Government's acceptance of program.

Tacoma Shipbuilding Co.

Five vessels of the Ferris type for government contract; 3,500 tons each, were launched by the Tacoma Company in 1918. The company has six ways, 300 feet long, and has a site of 35 acres on the harbor between the Puyallup river and Middle waterway. The company had four vessels under construction January 1, 1919. Henry A. Rhodes is president; John S. Baker, vice-president; J. S. Whitehouse, secretary; A. G. Pritchard, treasurer, and J. E. Bonnell, manager. All are Tacoma men. The company employes 560 men.

Seaborn Shipyards Co.

Output of the Seaborn company was increased from two vessels launched in 1917, to ten in 1918. These were all of wooden construction, Ferris type, 3,500 tons, for U. S. Shipping Board. Phillip Morrison is president; George Seaborn, vice-president; H. F. Ostrander, secretary-treasurer. Company employes 610 men, and has four ways, 300 feet long. The plant is on the City Waterway and was the first to engage in wooden ship construcway, and was the first to engage in wooden ship construction on a large scale in Tacoma.

Wright Shipyards Co.

The Wright Shipyards is headed by George P. Wright, of Tacoma, and Horace V. Wright, and is located on the City Waterway, just north of the Seaborn yards. The output in 1918 was five wooden vessels, Ferris type, for the federal government, each 3,500 tons d. w. Four ways are each 300 feet long. Company employs 300 men. The company was established in April, 1917.

#### Babare Bros.

Babare Bros, shipyard located on the west shore at Old Tacoma, expanded from a boat building concern in 1917 into a large wooden shipbuilding plant employing 130 men. It has two ways, each 300 feet long, and in 1918 launched two vessels of the Ferris type, each of 3,500 tons, which were delivered to the U. S. Shipping Board.

Martinolich Shipbuilding Co.

The Martinolich yards are at Dockton, Quartermaster Harbor, with offices in California building. John Martinolich is president; Col. C. A. Papst, secretary, and Joe Hansen, treasurer. The company has under construction

three auxiliary schooners for Norwegian interests.

These will be launched this year. They are 2,400 tons each. The company's ways are 280 feet, but are capable of greater expansion, due to the sloping character of the company's site.

#### Portland, Ore.

#### Northwest Steel Co.

Northwest Steel Company established in 1903, head office address, Portland, Ore.; location of plant, South Portland. J. R. Bowles, president; W. B. Beebe, vice-president and secretary; W. C. Smith, purchasing agent; L. R. Banks,

works manager; John Murray, superintendent of Hulls and Construction; W. C. Cullers, chief engineer. Cable codes used: Western Union, A. B. C. and Bentley. Cable address registered :Western Union: "Northsteel." Hulls launched to January 14, 1919, 22, all 8,800 tons deadweight freighters. Equipment consists of: four building slips, shops and outfitting plant, together with rivet and bolt manufacturing equipment, with a capacity of 3500 tons per month.

#### Albina Engine & Machine Works, Inc.

Albina Engine & Machine Works, Inc., was established in 1916; office and plant in Portland. Wm. Cornfoot, president; A. Reimann, vice-president; T. M. Geohegan, Asst. Gen. Mgr. Four building slips. Nine vessels delivered to the Emergency Fleet Corporation during 1918. Four vessels on ways, and five contracts with Emergency Fleet Corporation. Employ 2,911 men in normal times. Vessels built and under contract are of following dimensions: length over all, 300 ft., breadth 44 ft. 1 inch, depth 21 ft. 6 inches with a deadweight carrying capacity of 3.800 tons.

#### Columbia River Shipbuilding Corp.

Columbia River Shipbuilding Corporation was incorporated in 1916 and established for business in 1917. Plant now covers 25 acres located at foot of Meade St. A. F.

Smith, president.

Five 550 ft. building slips; 6,000 employees; keels laid during 1918 for 13-8,800 ton steel freight vessels to be equipped with Turbine engines. Eleven vessels were de-livered complete to the Shipping Board during 1918; con-tracts total 32. Balance of 21 to be delivered complete during 1919.

McEachern Ship Company

McEachern Ship Company was established in 1916; head office Wilcox Bidg., Portland, Ore.; location of plant, Astoria, Ore. A. Reimann, president; G. M. McDowell, vice-president and manager; Jesse Stearns, secretary; J. J. Chambreau, treasurer; A. O. Andersen & Co., New York; A. O. Andersen & Co., Cristiana, Norway, eastern and foreign or. Andersel & Co., Christiana, Norway, eastern and foreign representatives. Area of plant 10 acres; six building slips; electric and pneumatic plant; complete facilities for handling repair work; 400 employes under normal conditions; keels laid for 8 auxiliary power wooden freight schooners; internal combustion engine, sail.

#### St. Helens Shipbuilding Co.

St. Helens Shipbuilding Co., was established in 1911; office at St. Helens, Ore.; San Francisco representative, McCormick S. S. Co., 800 Fife Bldg.; area of plant, 10 acres; number of employes, 250.

#### Peninsula Shipbuilding Co.

Peninsula Shipbuilding Co. was established in 1916; head office, P. O. drawer 750, Portland; location of plant, foot of McKenna ave.; eastern representatives, Tams, Lemoine & Crane, 52 Pine St., New York City; F. C. Knapp, president; A. L. Mills, vice-president; James B. Kerr, secretary; the First Nat. Bank of Portland, custodian of funds. A. B. C., Scotts and Western Union codes are used. Area of plant, 40 acres; four 300-ft. building slips; 1,000-ft. dock with 30 ft. of water; under normal conditions 550 employes.

Columbia Engineering Works

Columbia Engineering Works established in 1901; head office address, Box 957, Portland; location of plant, Linnton Road, Portland. S. M. Means, president; Walter McKay, vice-president; A. M. Mears, mgr. and treas.; C. W. Steel, sec. Western Union Code used. Area of plant, 13 acres; 2 building slips under roof and 3 others have believe the and machine works in connection with have boiler shop and machine works in connection with shipyard; also have 1,000 ft. of waterfront and docks with derricks for handling material; 300 to 400 employes under normal conditions; all vessels are wooden freighters; internal combustion, twin-screw power, auxiliary bald-headed schooner rig sails, cargo winches are operated by

#### G. M. Standifer Construction Corp.

The G. M. Standifer Construction Corporation was established in 1916, the head office address, Vancouver, Wash. Steel and wood shipbuilding plants located at Vancouver, Wash., and wood shipbuilding plant at North Portland. Ore. 15 building berths in all; 4,000 employees; area of combined yards, 50 acres; good facilities for handling all kinds of repair work.

#### Supple-Ballin Shipbuilding Corp.

Established January, 1917. Head office address: E. Oak St., Portland, Ore. Location of plant: E. Oak, E. 1st. E. Ankeny and Willamette river. Officers of company: Jos. Supple, president; Arthur Languth, vice-president; Fred A. Ballin, secretary-treasurer. Area of plant: Eight acres. Number, size and lifting capacity of marine railways: trains 100 feet high; lift 75 tons. Facilities for handling repair work. Gantry's locomotive. Number of employes under normal conditions: 450.

#### Willamette Iron & Steel Works

The Willamette Iron & Steel Works was established in 1900; plant located at the foot of 19th St. Bert. C. Ball, M. E. president, Antoine G. Labbe, M. C. vice-president, Mortan H. Iinsley, secretary, Homer V. Carpenter, treasurer. Area of plant 10 acres; 2,500 employees; equipped for handling any kind of repair work; chief industry—building of logging engines and Scotch Marine Boilers. Fitted out and delivered in 1918, 16—8,800 ton ships. Contracts for 1919, 8-8,800 steel ships and 6-3,500 ton wooden ships.

#### Willamette Shipbuilding Co.

Established July 1917. Head office and plant: 1181 E. Water St., Portland, Ore. Officers: W. E. Jones, president; F. B. Jones, vice-president; M. T. Kady, secretary. Area of plant 200 by 540 feet.

#### Geo. F. Rodgers & Co.

Established August 1, 1917. Head office address: Astoria, Ore. Location of plant: Pier 2, Municipal Dock, Astoria, Ore. Officers of company: Geo. F. Rodgers, president; Q. Lowengart, vice-president; D. M. Field, secretary and treasurer. Area of plant: five acres. Number and size of building slips: four, large enough to accommodate four ships 286 feet long over all. Number of employes under normal conditions: 300.

#### Coos Bay Shipbuilding Co.

Established May, 1917. Head office address: Marshfield, Ore. Location of plant: Marshfield, Ore. Officers of company: O. E. Odelsperger, president; R. H. Corey, vice-president; A. Y. Meyers, treasurer; J. D. Goss, secretary. Area of plant: 12½ acres. Number of building slips: four. Number of employees under normal conditions: 300.

#### Feeney & Bremer Co.

Shipbuilding department established August, 1917. Head office address: Tillamook, Ore. Location of plant: Dick's Point, Tillamook Bay. Officers of company: Jas. Feeney, J. C. Langille, John Steinback. Area of plant: three acres two building slips. Number of employees under normal conditions: 60.

#### Wilson Shipbuilding Co.

Established, January, 1912. Head office address, Astoria, Ore. Location of plant, Smith's Point, Astoria. Ore. Officers of company—P. J. Brix, president; E. S. Collins, vice-president; J. A. Byerly, treasurer; Frithiof Kankkonen, secretary; Charles Wilson, manager. Area of plant 728x2,000 feet. Number and size of building slips—2, 330 building capacity, 2, 300 building capacity. Number, size and lifting capacity of marine railways—one of 350 to 400 tons capacity. Facilities for handling repair work. Dockage for two vessels and crane and derricks of 20 tons capacity. Number of employees under normal conditions, about 350.



#### Oakland, Cal.

#### W. F. Stone Shipvards

W. F. Stone Shipyards was established in 1899; head office and location of plant, Kennedy & Bocimer Sts., Oakland; area of plant, 300 ft. by 500 ft; 2 building slips, 300 ft. long. Handle any repair work afloat; 175 employes under normal conditions; keels laid for 3 vessels, 2 wooden steamers, 1,800 tons, 1 wooden internal combustion, 100 tons.

Wooden ships; foot of Dennison St. Wm. Crever: Hollywood Shipbuilding Co.: Steel ships: foot of 25th Ave

Moore & Scott Iron Works: Steel ships; San Fran-

cisco office, foot of 5th Ave.

Hanlon Dry Dock & Shipbuilding Co.: Steel and wooden ships; foot of 5th Ave.

P. Swanson: Foot of 9th Ave.

Barnes & Tibhits: Wooden ships; 175 Stuart St.,

San Francisco.

Union Construction Co.: San Francisco office, 604 Mission St.

#### San Francisco, Cal.

#### Union Ircn Works Co.

Union Iron Works Company, 311 California St., was Union Iron Works Company, 311 California St., was established in 1849. Head office address, 20th and Michigan Sts., San Francisco, Cal.; have three plants, San Francisco, Cal., Alameda, Cal., and Hunter's Point, San Francisco. John A. McGregor, president; Joseph J. Tynan, vice-president and general manager; Arnold Foster, treasurer and secretary; Western Union Telegraphic, International Cable Directory, 1916, A. B. C. Telegraphic, 5th edition, Liebers Std. Telegraphic, A. B. C. Universal Commercial Electric Telegraphic 4th edition. Scott's Chip. Commercial Electric Telegraphic 4th edition, Scott's, Ship-Owners' Telegraphic 1916, 10th edition, Codes used. Mr. A. W. Christian, 573 Bourse Bldg., Philadelphia, Pa., eastern representative; Mr. W. H. Pierson, 103 Grand Trunk Dock, Seattle, oil burner representative. Area of plant, 140 acres.

#### Dimensions of Graving and Floating Docks

Graving docks at Hunters' Point (No. 1 under construction): Length over all, No. 1, 1,020 ft.; No. 2, 750 ft.; breadth at top, No. 1, 153 ft.; No. 2, 103 ft.; breadth at bottom, No. 1, 110 ft.; No. 2, 86 ft.; depth over sill, No. 1, 45 ft., 6 in.; No. 2, 29 ft.

Floating drydocks at Hunters' Point (new dock under roating drydocks at Hunters Point (new dock under construction). Length over all, new dock, 450 ft.; No. 2, 271 ft.; No. 3, 301 ft.; length inside aprons, new dock, 400 ft.; No. 2, 231 ft., 4 in.; No. 3, 260 ft.; depth, new dock, 41 ft., 10 in.; No. 2, 35 ft., 5 in.; No. 3, 36 ft., 4 in.; depth of center keelson, new dock, 12 ft. 6 in.; No. 2, 10 ft. 0 in.; No. 3, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 3, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 10 ft. 0 in.; width new dock 12 ft. 6 in.; No. 2, 20 ft.; width new dock 12 ft. 6 in.; No. 2, 20 10 ft., 9 in.; No. 3, 10 ft., 9 in.; width, new dock, 100 ft.; No. 2, 84 ft.; No. 3, 90 ft.; width inside wings, new dock, 80 ft.; No. 2, 66 ft.; No. 3, 68 ft.; capacity in tons, new dock, 5,500 tons; No. 2, 2,200 tons; No. 3, 2,500 tons; water over sill, new dock, 18 ft.; No. 2, 16 ft.; No. 3, 16 ft.

#### Alameda Branch

Marine railways: Length over keel blocks, No. 1 railway, 320 ft.; No. 2 railway, 220 ft.; width, No. 1, 70 ft.; No. 2, 60 ft.; draft forward, No. 1, 18 ft.; No. 2, 18 ft.; draft aft, No. 1, 14 ft.; No. 2, 14 ft.; D. W. capacity, No. 1, 4,000 tons; No. 2, 2,000 tons.

Rolph Shipbuilding Co.

Shipyards located at Fairhaven, Humboldt Co., Cal., over 2,000 feet deep water frontage; capacity of plant, twelve slips; wooden vessels of all descriptions built at these yards, either sail or steam; employ approximately 300 men. This is the largest wooden shipbuilding plant at the Pacific Coast: extintly modern in all respects. on the Pacific Coast; strictly modern in all respects.

#### Wm. Munder & Sons

Head office address and location of plant: 956 Evans Ave., San Francisco. Six sets of ways for bay and river vessels, 350 tons capacity. Number of employes under normal conditions, about eight men.

#### Schaw-Batcher Co. Pipe Works

Shipbuilding department established August 22, 1917. Head office address: South San Francisco, Cal. Location of plant: South San Francisco, Cal. J. H. Batcher, president; C. L. Moorman, vice-president; E. G. Ekstrom, general manager; W. G. Aldenhagen, secretary. Codes used. Western Union "Batcher." Area of plant: 175 acres. Number and size of building slips: one 516 feet; two, 450 feet each. Outfitting wharf with one 25 ton crane for installing and handling repair work. Number of employes under normal conditions. 1,700.

H. P. Anderson: Wooden boats and barges. 850

Innes Ave.
G. W. Kneas: Wooden boats. 18th and Illinois Sts.
Schultze, Robinson & Schultze Co.: 1151 Evans St.
John Twigg & Sons: Wooden boats. Illinois St., near 18th St.

#### Wilmington, Cal.

#### Fellows & Stewart, Inc.

(Formerly Joe Fellows Yacht & Launch Co., Inc.) Fellows & Stewart, Inc., was established in 1908. Head office address and location of plant, Wilmington, Cal. Joe Fellows, president; V. B. Stewart, secretary and treasurer. Area of plant 4 acres; 2 building slips, 250 ft. long; five 250-ton capacity marine railways. Excellent facilities for handling repair work; 50 employes under normal conditions. Now building tugs, launches, etc. Has lately largely increased equipment and added new marine railway of 400 tons capacity.

#### Fulton Shipbuilding Co.

C. E. Fulton, president and superintendent; E. H. Seaver, secretary. Established July, 1917. Area of plant, five acres; four building slips, 3,500 tons each; one marine railway, 300 tons. All facilities for handling repair work. Number of employes under normal conditions, 250.

#### Ralph J. Chandler Shipbuilding Co.

M. H. Sherman, president; R. J. Chandler, vice-president and manager; R. P. Sherman, vice-president; William Muller, superintendent,

Wilmington Shipbuilding Co.: Wooden ships. French-American Shipbuilding Co.: Concrete ships.
West Coast Shipbuilding Co.: Wooden ships.

#### Long Beach, Cal.

#### Long Beach Shipbuilding Co.

The Long Beach Shipbuilding Company comprises the California and Craig Shipbuilding Company, the companies consolidating in 1917. The officers are James G. Craig, president and treasurer; John F. Craig, chairman of the Board; John Craig, II., second vice-president and secretary; Thomas R. Merrell, general manager; Lloyd Swayne, mechanical engineer, in charge of draughting department; Herbert La France, electrical engineer; Western Union Code used; they have no eastern repremethod is used; 2,850 employees. Two 3,200 ton and three 6,000 ton steel freighters delivered to emergency fleet corporation during 1918—also 3 submarines; one thus far in 1919. (5,200). Company has one 3,000 ton dry-dock.

#### Los Angeles, Cal.

#### Marine Engine & Supply Co., Inc.

Marine Engine & Supply Co., was established in 1909; office address, 823 Los Angeles Street; plant located at 832 East Ninth Street; Fred A. Walton, vice president, is acting as president at present owing to death of Mr Shane; Frank P. Walton, secretary and treasurer; this firm devotes itself entirely to the contracts of small boats and submarines in hand-v-bottom boats and K. D. frames.

Los Angeles Shipbuilding & Drydock Co.
Fred L. Baker, president; S. L. Naphtaly, vice president and general manager; F. A. Gardner, engineer of plant; 70 acres; 6 ways. Number of employees: 3,000 under normal conditions.

California Boat Building Co.
Builders and repairers of power fishing boats.
Southwestern Shipbuilding Co.
Steel ships. San Pedro.

#### San Diego, Cal.

#### San Diego Marine Construction Co.

San Diego Marine Construction Company, builders of small boats only, was established in 1911; office address, San Diego, Cal.; location of plant, San Diego Bay; F. C. Spalding, president; Carl Clive, vice president; C. W. Stose, secretary and manager and treasurer; capacity of marine railway, 200 tons; fine facilities for repair work, boat shop, paint shop, 3 marine railways, 20 employes under normal conditions.

#### Pacific Marine & Construction Corp.

This company is a subsidiary of the Scofield Engineering Co. of Philadelphia, and occupies the site formerly used by the United States Steel Shipbuilding Corporation. During 1918 the Pacific Marine & Construction Corporation began construction of two 750-ton concrete oil tankers. The yard is equipped with two ways. Officers in charge are, E. M. Scofield, president; G. M. Scofield, vice-president; Oswald Speir, vice-president; Frank Daugherty, consulting engineer; C. L. Christie, secretary and executive assistant; P. J. Hickey, general superintendent, and H. H. Hile, naval architect.

#### Seattle, Wash.

In 1918 Seattle shipbuilders built and launched ninety-six ocean-going vessels of various types and designs, aggregating total deadweight tonnage of 651,-200 tons. This immense contribution to the depleted merchant marine of the world represents only those vessels actually built in Seattle. It does not include the tonnage launched at Tacoma, Olympia, Bellingham, Raymond and Grays Harbor, all of which shipbuilding points are included in the Eighth shipping board district.

Of these ninety-six ships, sixty-one were big steel freighters of 7,500 tons or more, in fact only seven vessels of that type were launched, the others being of 8,800 to 10,000 tons. Seattle's contribution of steel ships aggregated 535,200 tons. It was this rapid fire construction that earned the city glory and fame throughout the world, for the news of the achievements of the local shipbuilders was carried to the far corners of the earth. The world marveled at the accomplishment

In fact it was Seattle which revolutionized shipbuilding from a speed production point of view. Until David Rodgers, general manager of the Skinner & Eddy plant, first put a big steel freighter in commission in less than 100 working days, ships of the type built here were registered as record-breakers in point of construction if completed in less than 250 days. When the shipbuilders of the Clyde were told of the Skinner & Eddy feat they were skeptical. They doubted the achievement. Said it could not be done. But it was done, and not only this, but the Seattle plant turned out a ship in commission later in the year in seventy-eight calendar days!

But that is only a small part of the Seattle achievements. The Skinner & Eddy plant, with the vessel sent down the ways on the last day of the year, rounded out 1918 with a record of having launched a total of thirty big steel vessels, twenty-five of which, including five 9,600-tonners, were produced from the five shipways of plant No. 1, a record of five ships per way for the year. This is a record never before equaled, and probably never will be now that the war emergency has ceased to exist and speed is no longer being urged as an absolute necessity. The remarkable part of the Skinner & Eddy feat is that twenty-six of these vessels are now in commission, and three vessels launched late in 1917 and completed in the past year give the yard a total of twenty-nine vessels completed for the year.

#### Launched 988,000 Tons

Skinner & Eddy's total tonnage launched during the year was 268,000 dead weight tons, or approximately half of the production of all the local steel plants. Many shipyards existent long before the Skinner & Eddy plant was even conceived are listed with the shipping board as having produced hardly half as many ships as the lowest producing plant on the Pacific Coast. And when this Coast entered the shipbuilding game there were but three plants located on Pacific waters which had ever built a steel vessel. Less than three years ago Seattle's record-making shipyards were covered with tide water, so in addition to building the ships, each plant is a new one.

While the Skinner & Eddy record is the most important feat of accomplishment, two other Seattle ship-yards have made splendid records in shipbuilding, while a third plant was coming strong in the matter of records when the armistice interfered to the extent of slackening up the work. The plants of J. F. Duthie & Co. and the Ames Shipbuilding & Dry Dock Company stand out prominently. In the matter of delivery of completed ships the Duthie concern ranked fourth among the Pacific coast yards in shipping board statistics.

The Duthie builders completed twelve vessels during the year, and commissioned another shortly after January 1. This plant also launched two ships in January, thus opening the new year most auspiciously.

The Ames plant performed the unique feat of launching an even dozen ships during the previous year. This is a four-way plant, and when consideration is given to the fact that two of the twelve ships were tankers of 10,000 deadweight tons, the achievement can be ranked as highly meritorious. The Ames production gives the plant a record of three ships per way for the year, a remarkable performance for a new shipyard. In March, 1917, the Ames plant did not exist, and the site of the plant was, for the most part, submerged. This shipyard is now constructing vessels complete, as engines, boilers, and material parts of the vessels are turned out at this most complete and up-to-date plant.

The Seattle North Pacific plant entered into the game at a late hour comparatively, and the coming of the armistice quite evidently prevented the accomplishment of some new records. This plant laid its first keel in June, and launched its first ship in September, a feat worthy of note in itself. This plant is building vessels of 9,400 deadweight tons on shipping board contracts.

The old Seattle Construction & Dry Dock Company plant, one of the Todd interests, was absorbed by the Skinner & Eddy Corporation for operation prior to June 1. The four ships and three more remaining on the ways at the time of the transfer were later launched by Skinner & Eddy. This plant was engaged in building 7,500-ton freighters of the Isherwood type, which are now being built at the Tacoma plant of Todd's

#### Seattle Yards Built 62 Ships

Thus the Seattle steel shipyards produced a total of sixty-two big vessels launched for the twelve months concluded December 31, 1918. No other single shipbuilding community in the whole world can point to a similar record of achievement. The Seattle builders have done famously and when the time comes that the world will come to America for steel ships again, Seattle will certainly get her share.

While the producers of the giant steel hulls were making a splendid showing under war-time pressure the twelve local wood plants were not falling down. Many were the trials of the wood builders, and they are by no means free of them yet, but despite all manner of handicaps these dozen yards turned out a total deadweight tonnage of 122,100 tons, represented in thirty-seven various types of vessels. The leading wood yard, from a production point of view, was the

Patterson-MacDonald shipbuilding concern, which firm built and launched seven vessels for Australian interests in 1918

Building for the United States shipping board the Meacham & Babcock Company launched seven wood vessels of the Ferris type aggregating 24,500 deadweight tons. This plant is located on Salmon bay and is one of the best appointed wood shipyards in the country. Like all wood builders, this plant is awaiting the final word from the shipping board on the matter

of remaining in operation.

Ranking third in ship production among the wood plants is the Puget Sound Bridge & Dredge Company, which concern started operations in 1917 when it built seven auxiliary powered schooners on foreign account, In 1918 the concern launched and completed five more of these vessels, two of which were on private account and later sold to the Pacific Steamship Company. The concern is now completing five ships undertaken on account with the United States shipping board.

Another wood plant which made a splendid record during the war emergency is the Nilson & Kelez Shipbuilding Company, located on Elliott bay. This plant. with three shipways, launched five vessels, and has two more now well along in the process of sheathing. This concern is also building for the United States shipping board.

The fourth wood plant included among the plants favored with shipping board contracts is the Allen Shipbuilding Company, also located on Salmon bay. During 1918 this yard launched two Allen-type ships, one of which has been delivered.

The seven other wood shipyards all were constructing vessels on private or foreign account. These are small plants, but conducted most efficiently, as the records of production show.

Summing up Seattle's ship production for the year it is shown that 1918 promises to go into history as the banner shipbuilding year. The total of 651,200 tons represented in ninety-six vessels is likely to stand for many years. In 1917 the local shippards produced only 184,800 tons.

#### Ames Shipbuilding Co.

Correct corporate name of Company, Ames Shipbuilding & Drydock Company. Plant address, 26th Ave. S. W. and West Hanford St. Executive office address, 1610 Hoge Building. Codes used, Western Union 5-letter code. Edgar Ames, president; Geo. W. Albin, vice-president; Geo. W. Albin, treasurer; C. A. Barron, purchasing agent. Building steel ships. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, nine 8800-ton ships and two 9500-ton tankers. Yard established, December 1916. Acreage covered by plant, twenty-eight acres. Number of ways, four. Number of employes, five thousand (average year 1918). Under contract to build sixteen 8800-ton cargo ships. Soon to commence construction of twelve thousand ton drydock,

#### Anderson Shipbuilding Corporation.

Correct corporate name of company, Anderson Shipbuilding Corporation. Plant address, Houghton, Washington. Executive office address, 816 Alaska Building. Seattle, Washington. J. L. Anderson, president; James Campbell, vice-president; J. L. Anderson, treasurer. Building wood ships. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, two 3250-ton steamers. Yard established July, 1917. Acreage covered by plant, six acres. Number of ways. four. Number of outfitting docks, one. Number of employes, 500 (average year 1918). Under contract to build two 3000 ton auxiliary schooners for Christoffer Hannevig, Inc., New York. Has plant equipped to make repairs. Capacity, 1500 tons. Length of way about 340 ft., which can be lengthened. Complete the complete the state of the second built and delivered It. roster of names of vessels built and delivered, U. S. lighthouse tender "Rose," steel vessel; S. S. "Bainbridge", steel vessel; S. S. "Lincoln," steel ferry; S. S. "Washington," wood ferry; S. S. "Issaquah," wood ferry; S. S. "Oleander," wooden vessel of 3250 tons; S. S. "Osprey," wooden vessel of 3250 tons; S. S. "Atlanta," wooden vessel of 3250 tons; S. S. "Fortuna," wooden vessel of 3250 tons; S. S. "Triton," wooden vessel of 3250 tons; S. S. "Aquillo," wooden vessel of 3250 tons; S. S. "Dawn," wooden vessel of 3250 tons; S. S. "Urania," wooden vessel of 3250 tons; S. S. "Mercer," wooden vessel of 3250 tons; S. S. "Rainier," wooden vessel of 3250 tons.

#### Ballard Marine Ry. Inc.

Correct corporate name of company, Ballard Marine Ry. Inc. Plant address, foot 24th Ave., Ballard Sta. W. G. Fryberg, president; H. F. Fryberg, vice-president; T. W. Smith, purchasing agent. Number, size and class of vessels built since establishment of vard to Jan. 21, 1919, one steam schooner. Yard established, June 1916. Acreage covered by plant, 8 acres. Number of ways, 1. Number of outfitting docks, 1. Number of employes, 135 (average year 1918). Plant equipped to make repairs. Capacity, 600 ton marine railway. Length of cradle, 112 ft. long, 28 ft. width.

#### . J. F. Duthie and Co.

Correct corporate name of company, J. F. Duthie and Correct corporate name of company, J. F. Duthie and Co. Plant address, 3262 Kitsap Ave. Executive office address, box 1832. J. F. Duthie, president; N. A. Christof, vice-president; H. G. Kessler, secretary; L. A. Mason, naval architect; C. O. Bretherick, chief engineer; E. C. Gaumnitz, purchasing agent. Building steel ships. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, 14 8800-ton D. W. ton cargo vessels. Yard established, November 1911. Acreage covered by plant, 23.65 acres. Number of ways, 4-450 feet long. Number of outfitting docks, one. Number of employes. 3000 (average year 1918). one. Number of employes, 3000 (average year 1918). one. Number of employes, 3000 (average year 1918). Foreign or eastern representatives, Walter C. Jones, 1123 Commercial & Continental Bank Bldg., Chicago, Ill., and J. E. Barnes, 315 Fidelity & Mutual Life Bldg. Philadelphia, Pa. Under contract to build 15 8800-ton general cargo vessels for the U. S. shipping board. Three of these are temporarily suspended. Number of drydocks, one of 10,000 ton capacity, contemplated. Complete roster of names of vessels built and delivered. of drydocks, one of 10,000 ton capacity, contemplated. Complete roster of names of vessels built and delivered: "Unimak," Whaler; "Kodiak," Whaler; "Starr," Hallibut steamer; "Leschi," side wheel ferry steamer; "Ames," stern wheeler for Alaska trade; "Pontoon;" "Robt. Bridges," double ended screw vessel, ferry boat; S. S. "West Point," Gen. Car.; S. S. "Westerner," Gen. Car.; S. S. "Westerfield," Gen. Car.; S. S. "Westbridge," Gen Car.; S. S. "Western Sea," Gen. Car.; S. S. "Western Star," Gen. Car.; S. S. "Western King," Gen. Car.; S. S. "Western Cross," Gen. Car.; S. S. "Western Hope," Gen. Car.; S. S. "Westpool," Gen. Car.; S. S. "Western Hope," Gen. Car.; S. S. "West Helix," Gen. Car.; S. S. "West Hembrie," Gen. Car.

#### Elliott Bay Dry Dock Co.

Correct corporate name of company, Elliott Bay Dry Dock Company, Plant address, King Street Dock. Executive office address, 1 West Spokane St., Seattle, Washington. J. F. Swanberg, president; Jas. Campbell, vice-president; C. F. Swanberg, treasurer; E. A. Lamb, purchasing agent. Number of dry docks, one. Number of sections in each, one, and length of each, 140 feet. Dry docks, length over all 140 ft.; width, 36 ft. Capacity in tons, 600 tons. Acreage covered by plant, one acre. Number and kinds of buildings at plant, paint and acre. Number and kinds of buildings at plant, paint and machine and boiler shops. When established, 1908. Length of ways (docks), 120 feet long. Facilities: Equipped to handle repairs on vessels up to 500 tons.

#### Grays Harbor Corp.

Correct corporate name of company, Grays Harbor Motorship Corporation. Plant address, Aberdeen, Washington. Executive office address, 911 Securities Bldg. Seattle, Wash. A. Schubach, president; M. R. Ward, vice-president; Bruce C. Shorts, secretary; W. J. Patterson, treasurer; H. L. Rich, purchasing agent. Building wood ships. Number, size and class of vessels

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built since establishment of yard to Jan. 21, 1919, 1 4000-ton Aux. motor schooner and 9 4100 ton steamships. Yard established, March 1917. Acreage covered by plant, twelve acres. Number of ways, eight. Number of outfitting docks, two. Number of employes (average year 1918), 2400. Under contract to build, 8 4500-ton steamers and 7 4100-ton steamers. Marine railway capacity, 1000 tons. Length of ways, 325 feet. Complete contract of names of yearsale built and delivered. "Marine capacity, 1000 tons, Length of ways, 325 teet. Complete roster of names of vessels built and delivered: "Marie De Ronde," 5 masted topmast Aux. motor schooner, 4,000 tons D, W. Following were all 4100-ton D. W. twin screw steamships: "Abrigada," "Wishkah," "Kaskaskia," "Blackford," "Bromelia," "Brompton," "Broncho," "Brookdale," "Brookfield." All built Lloyds classification.

#### Heffernan Dry Dock Co.

Correct corporate name of company, Heffernan Dry Correct corporate name of company, Heffernan Dry Dock Company. Plant address, 701 Harbor Ave. Executive office address, 108 R. R. Ave., South. Code used, Watkins and Watkins universal, A. B. C. J. T. Heffernan, president and treasurer. Number of dry docks, one. Number of sections in each, one. Dry docks: Length over all, 340 ft.; length inside aprons, 284 ft. 10 in.; depth, 10 ft.; depth of center keelson, 10 ft.; width, 76 ft. 8 in.; width inside wings, 56 ft.; capacity in tons 5000; water over sill 19 ft. Acres of coverable. in tons, 5,000; water over sill, 19 ft. Acreage covered by plant, 19 acres. Number and kinds of buildings at plant, one storage warehouse and workshed. Outfitting slips. four. Facilities: Equipped to handle repairs on vessels up to 5,000 tons.

#### McAteer Shipbuilding Co.

Correct corporate name of company, McAteer Ship-building Co. Plant address, 329 Willow St. J. McAteer, building Co. Plant address, 329 Willow St. J. McAteer, president; W. Nelson, vice-president; J. McAteer, treasurer; O. J. Ramm, purchasing agent. Yard building: one steel, 1000 tons, two wood, 2500 tons. Yard established, present site 1913. Acreage covered by plant, four acres. Number of ways, three. Number of outfitting docks, one. Number of employes (average year 1918), 160. Plant equipped to make repairs, 1000 ton capacity marine railway. capacity marine railway.

#### National Shipbuilding Co.

Correct corporate name of company, National Ship-building Co. Plant address, 655 Gordon St., Seattle. Executive office address, 1023 Alaska Bldg., Seattle. Officers of company: J. F. Lane, J. L. McLean, and Universe of company: J. F. Lane, J. L. McLean, and Loren Grimstead, trustees operating plant; Ben Murphy, purchasing agent. Building wood ships. Number and size and class of vessels built since establishment of yard to Jan. 21, 1919, 1 1450-ton D. W., 2 3500-ton D. W. Complete roster of names of vessels built and delivered, tender "Apex," schooner "Bright," motor schooner "Brick." Yard established, Jan. 1, 1917.

Acreage covered by plant four. Number of ways two Acreage covered by plant, four. Number of ways, two. Length of ways, 300 ft. Number of outfitting docks, one. Number of employes, 200 (average year 1918).

#### Nilson & Kelez.

Correct corporate name of company, Nilson & Kelez Shipbuilding Corp. Plant address, 2241 Whatcom Ave. John Erickson, president; A. S. Nilson, vice-president; E. C. Johnson, treasurer; N. M. Kelez, purchasing agent. Building wood ships. Number, size and class of vessels built since establishment of ward to Len. 21, 1919. built since establishment of yard to Jan. 21, 1919, six Ferris type steamers. Complete roster of names of vessels built and delivered: For Shipping Board Emergency Fleet Corp., finished up to Jan., 1918, S. S. "Bonnafone," S. S. "Forster," S. S. "Octorara," S. S. "Adway," S. S. "Cineas." Yard established, July, 1917. Adway, S. S. Chieas. Fard established, July, 1917.

Acreage covered by plant, nine acres. Number of ways, three. Number of outfitting docks, two. Number of employes 600 (average year 1918). Under contract to build, eight steamers, Ferris type, 3500 tons. No dry dock, but do repairing. Length of launching ways, about 400 ft. long.

#### Norway-Pacific.

Correct corporate name of company, Norway-Pacific Correct corporate name of company, Norway-Pacific Construction and Dry Dock Co. Plant address, Everett, Wash. Executive office address, White Bldg., Seattle, Wash. Codes used, A. B. C., 5th Ed., Western Union, Watkins. M. G. Thomle, president; W. R. Stockbridge, E. Janson, vice-presidents; J. L. Stixrud, treasurer; David Currier, Jr., purchasing agent. Building steel ships. Yard established, 1919. Acreage covered by plant, 40. Number of ways, five, 600 ft. Number of outfitting docks, three. Under contract to build, five coast guard cutters, 1600 D. W. ton, 240 ft. long, 39 ft. beam. Dry dock will be constructed this year, capacity 12,000 tons. 12,000 tons.

#### J. H. Price Shipbuilding Co.

Correct corporate name of company, J. H. Price Shipbuilding Co., Inc. Plant address, Metum, King Co., Wash. (Ballard St. P. O.). Executive office address. 1023-4 Alaska Bldg. Codes used, Western Union. J. H. Price, president; J. L. McLean, vice-president and treasurer; J. P. Nudd, manager. W. S. Lagien, purchasing agent; C. B. Mann, auditor; A. Nichols, Supt. Constr. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, 2 2500 D. W. ton wooden vessels. Yard established, I. H. P. Shipbldg. Co. purchased plant June 8, 1918 J. H. P. Shipbldg. Co. purchased plant June 8, 1918. Acreage covered by plant, seven and three-fourths acres. Number of ways, six. Number of employes (average year 1918), 225. Under contract to build, 2 2500 tons. 1 3500 tons. Length of ways, 220 feet.

#### Puget Sound Bridge & Dredging Co.

Correct corporate name of company, Puget Sound Bridge & Dredging Co. Executive office address, 811 Central Bldg., Seattle. Codes used, all. S. H. Hedges, president; R. M. Dyer, vice-president and treasurer; Geo. H. Hardenberg, secretary. Number, size and class Geo. H. Hardenberg, secretary. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, 10 2500-ton semi-powered schooners, 2 3000-ton semi-powered schooners, 2 3500-ton steam schooners. Yard established, June, 1916. Acreage covered by plant, eighteen acres. Number of ways, six. Number of outfitting docks, two. Number of employes (average year 1918), 700. Under contract to build 6 5000-tons wooden hull schooners.

#### Seattle Construction & Dry Dock Co.

Seattle Construction & Dry Dock Co.

Plant disposed of to U. S. Shipping Board, Emergency Fleet Corporation, in May, 1918. Correct corporate name of company, Seattle Construction & Dry Dock Company. Plant address, Railroad Ave. and Charles St., Scattle, Wash. Codes used, A. B. C., Western Union, Bentley's. C. W. Miley, president; John D. Reilly, vice-president; H. W. Kent, treasurer; C. L. Bankson, purchasing agent. Building steel ships. Yard established, March, 1906. Acreage covered by plant, 27 acres including water area. Number of ways, five, (2 560 feet, 3 489 feet). Number of outfitting docks, three. Foreign and Eastern representatives, Todd Shipyards Corporation, 15 Whitehall St., New York. Roster yards Corporation, 15 Whitehall St., New York. Roster yards Corporation, 15 Whitehall St., New York. Roster of vessels built by Seattle Construction & Dry Dock Co.: S. S. "Cauto," 5000 tons D. W.; S. S. "Panuco," 5000 tons D. W.; S. S. "Gwin" (Destroyer); S. S. "Golden Gate," 7500 tons D. W.; S. S. "Key West," 7500 tons D. W.; S. S. "Storviken," 7500 tons D. W.; S. S. "Sutherland," 7500 tons D. W.; S. S. "Sutherland," 7500 tons D. W.; S. S. "Sutherland," 7500 tons D. W.; S. S. "Wittorio Emmanuele," 7500 tons D. W.; S. S. "Willimantic," 7500 tons D. W.; S. S. "Deranof," 7500 tons D. W. Previous to list of vessels here given, 84 vessels were built by this concern. built by this concern.

#### Seattle North Pacific Co.

Correct corporate name of company, Seattle North Pacific Shipbuilding Co. Plant address, Iowa and Idaho Sts. C. J. Erickson, president; John D. Twohy and James W. Black, vice-presidents; James F. Twohy,

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treasurer; Herbert Magune, purchasing agent. Yard building steel ships. Yard established, June 19, 1918. Acreage covered by plant, 32. Number of ways, five. Number of employes (average year 1918), 2,500. Under contract to build, ten 9400-ton cargo vessels. Length of ways, 470 ft. long, 80 ft. wide.

#### Skinner & Eddy Corp.

Correct corporate name of company, Skinner & Eddy Corporation. Plant address, Foot of Connecticut St. Executive office address, 1621 Smith Building. D. E. Skinner, president; H. G. Seaborn, Louis Titus, J. W. Eddy, vice-presidents; Thad Sweek, treasurer; Raymond Anderson, purchasing agent. Building steel ships. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, 3 tankers, 37 8800 tons, 3 9600 tons, total 43 vessels. Complete roster of names of vessels built and delivered: S. S. "Niels Nielsen," S. S. "Hanna Nielsen," S. S. "Louise Nielsen," S. S. "S. W. Harkness," S. S. "Josiah Macy," S. S. "Stolt Nielsen," S. S. "Jeanette Skinner," S. S. "Lieutenant De Missiessy," S. S. "Western Front," S. S. "West Haven," S. S. "West Haven," S. S. "West Haven," S. S. "Western Hero," S. S. "Trontolite," S. S. "Absaroka," S. S. "Ossineke," S. S. "Westlake," S. S. "Canoga," S. S. "Ossineke," S. S. "Western Queen," S. S. "West Durfee," S. S. "West Lianga," S. S. "West Alsek," S. S. "West Hobomac," S. S. "West Gotomska," S. S. "West Hobomac," S. S. "West Gotomska," S. S. "West Hobomac," S. S. "West Madaket," S. S. "West Elcasco," S. S. "West Madaket," S. S. "West Elcajon," S. S. "Edgeombe," S. S. "West Maximus," S. S. "Edgemont." Yard established, Jan., 1916. Acreage covered by plant, 53 acres. Number of ways, ten. Number of outfitting docks, four. Number of employes, 13,500 (average year 1918). Foreign or Eastern representatives, William Kaelin, 6 Lloyd's Ave., London, EC-3; George B. Royal, 67 Vandergrift Bldg., Pittsburgh, Pa. Under contract to build, 39 vessels; 1 8300 tons, remaining 38, 9600 tons, 25 9600 tons for Shipping Board. Has dry dock, equipped to make repairs, capacity 15,000 tons. Correct corporate name of company, Skinner & Eddy Board. Has dry dock, equipped to make repairs, capacity 15,000 tons.

#### Skinner & Eddy Dry Docks

Correct corporate name of company, Skinner & Eddy Correct corporate name of company, Skinner & Eddy Corporation. Plant address, 24 W. Connecticut St. Executive office address, 1621 Smith Building. D. E. Skinner, president; H. G. Seaborn, J. W. Eddy, vice-presidents; Thad Sweek, treasurer; Ray Anderson, purchasing agent. Number of dry docks, one. Number purchasing agent. Number of dry docks, one. Number of sections in each, five, and length of each, 90 feet. Dry docks: Length over all, 459 feet; depth of towers, 50 feet 11 inches; width 126 feet 8 inches; width inside wings 90 feet 6 inches; capacity in tons 15,000; water over sill, 24 feet. Acreage covered by plant, 57. Yard established, Jan., 1916. Building slips, ten. Facilities, 50 ton floating stops. 50-ton floating crane, machine shop. Equipped to handle repairs on vessels up to 10,000 gross tons.

#### Todd Company.

Todd Company.

Correct corporate name of company, Todd Dry Dock & Construction Corporation. Plant address, Tide Flats, Tacoma, Washington. Codes used, A. B. C., Western Union, Bentley's. C. W. Wiley, president; J. A. Eves, and J. S. Milne, vice-presidents; H. E. Coleman, treasurer; C. L. Bankson, purchasing agent. Building steel ships. Number, size and class of vessels built since establishment of yard to Jan. 21, 1919, 6 7500-ton vessels completed and delivered. Yard established, commenced construction of vessels, September, 1917. Acreage covered by plant, 100. Number of ways, eight, (six 405 feet long, two 560 feet long). Number of outfitting docks, one. Number of employes, 4,000 (average year 1918). Foreign or Eastern representatives, Todd Shipyards Corporation, 15 Whitehall St., New York. Under contract to build, 24 for Shipping Board, 3 Scout Cruisers for Navy Department; Shipping Board ships to be 7500-ton type. Complete roster of names of vessels built and delivered: S. S. "Chebaulip," 7500 tons; S. S.

"Masuda," 7500 tons; S. S. "Anacortes," 7500 tons; S. S. "Puget Sound," 7500 tons; S. S. Bellingham," 7500 ton; S. S. "Yukon," 7500 tons.

#### Todd Dry Docks, Inc.

Correct corporate name of company, Todd Dry Docks, Inc. Plant address, Harbor Island, Seattle, Washington. Codes used, A. B. C., Western Union, Bentley's. C. W. Wiley, president; H. W. Kent, vice-president; H. W. Kent, treasurer. Number of dry docks, three, (one wooden dock, one steel dock, one wooden sectional dock). Number of sections in each, four sections, and length of each, 90 feet. Acreage covered by plant, 16.4 acres. Yard established, June, 1918. Outfitting slips, two. Facilities, include all kinds of marine repair work, installations, etc. Dry Docks—Wood Dry Docks: Length over all, 200 feet; no aprons; depth over all, 42 feet 10 inches; depth of center keelson, 12 feet 6 inches; width, 80 feet; width inside wings. 55 feet 1 inch; depth of center keelson, 13 feet; water over sill, 21 feet; capacity in tons, 3,000. Sectional Dry Dock: Four sections, length of each section, 90 feet; length over all, 428 feet 9 inches; length inside aprons, 366 feet 9 inches; width 126 feet 8 inches; capacity in tons, 12,000 tons; width between wings, 106 feet 8 inches at top, 92 feet 8 inches at pontoon deck; depth, 50 feet 9 inches; depth of center keelson, 17 feet 8 inches; water over sill, 30 feet 4 inches. Steel Dry Dock: Length over all, 468 feet; no aprons; depth, 51 feet 3 inches; over all, 408 feet; no aprons; depth, 51 feet 3 inches; depth of center keelson, 14 feet 3 inches; width, 113 feet; width inside of wings, 91 feet; capacity in tons. 12,000 tons; water over sill, 29 feet 8 inches. Acreage covered by plant, 16.4 acres. Buildings— General shop: pipe shop, machine shop, joiner shop carpenter shop, boiler shop, blacksmith shop, steel fabricating shop, power house, store building, caulkers and riggers, oil house, lumber shed, pipe shed, two storage buildings, general office, hospital and restaurant.

#### West Seattle Boat & Engine Co.

Correct corporate name of company, West Seattle Boat & Engine Co. Plant address, 1630 Harbor Ave., Seattle, Wash. Executive office address, 1202 Smith Building, Seattle. Horare H. Guth, president; Howard A. Bernardo, treasurer. Number and kinds of buildings at plant, one two-story frame. Established, 1912. Building slips, two. Outfitting slips, two. Marine railway cradles, three; length, 115 feet; capacity, 200 tons; width between standards, 24 feet. Successor to West Side Boat & Engine Works. Equipped to handle repairs on vessels up to 200 tons,

#### Gulowsen Grei Engine Co.

Established in 1889 in Christiania, Norway, and placed its first heavy oil marine engines on the market in 1902. It is now the largest builder of this type of engines in Norway. The Gulowsen Grei Engine Co., of Seattle. Norway. The Gulowsen Grei Engine Co., of Seattle, was organized in 1918, with \$700,000, a plant covering six acres located on Salmon Bay, just east of the Government Locks connecting Lake Washington and Puget Sound. The plant is equipped with every modern appliance necessary for the construction of their high class engines. Main machine shop 175x350 feet, of saw-tooth construction, is equipped with the very latest machinery, including five electric cranes. All the machinery is electrically driven. Foundry building 100x 150 feet equipped with a 15-ton crane for handling heavy castings; Pangborn Sand Blast process for cleaning castings. Steel, iron, brass and bronze castings are made here. Pattern shop 50x125 feet, equipped with all the latest wood-working machinery. A stiff-leg crane will be erected on the wharf for lowering engines into Three marine ways are to be built on the the vessels. west end of the grounds with capacities for handling boats from the smallest, up to one hundred fifty (150 feet) in length. The engines will go directly from the Testing Room floor into the vessels after which the vessel will be hauled out on the marine ways and the proper propeller equipment, sea-cocks, etc., will be installed. After the vessel has been given thorough sea trials, it will then be turned over to the owners.

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# Shipyards of the United States

Builders of Steel Vessels American International Corporation: Off. 140 North Broad Street, Philadelphia, Pa.; Wks. Philadelphia. Pa. (Hog Island).

Atlantic Corporation: Off. Portsmouth, N. H.; Wks Portsmouth, N. H.

American Shipbuilding Co.: Off. Foot of West 54th Street, N. W., Cleveland, Ohio; Wks. Various Great Lake ports.

American Shipbuilding Corporation: Off. Alexandria, Va.; Wks. Alexandria, Va.

Baltimore Dry Dock & Shipbuilding Co.: Off. Balti-

more, Md.; Wks. Baltimore, Md.

Bayles Shipyard (Inc.): Off. 115 Broadway, New York, N. Y.; Wks. Port Jefferson, Long Island, N. Y. California Shipbuilding Co.: Off. Long Beach, Calif. Wks. Long Beach, Calif. Columbia River Shipbuilding Corporation: Off. Portland.

Downey Shipbuilding Corporation: Off. Portland, Ore.; Wks. Portland, Ore.

Downey Shipbuilding Corporation: 120 Broadway,
New York, N. Y.; Milliken, Richmond Borough, New
York, N. Y.

Daniels, Oscar, Co.: Off. Woolworth Building, New York, N. Y.: Wks. Tampa, Fla.

Erickson Engineering Co., Inc.: Off. New York, N. Y., 18th floor Hanover National Bank Bldg., Nassau and Pine Streets; Wks. Seattle, Wash.

Federal Shipbuilding Co.: Off. 54 Dey Street, New York, N. Y.; Wks. Hackensack River, N. J. Groton Iron Works: Off. 50 Broad Street, New York, N. Y., Groton, Conn.; Wks. Groton, Conn.; Noank, Conn.

Noank, Conn.

Hampton Roads Shipbuilding & Dry Dock Corporation: Off. Norfolk, Va.; Wks. Norfolk, Va.

Jahncke Shipbuilding Co., Inc.: Off. 814 Howard Ave., New Orleans, La.; Wks. New Orleans, La.

Los Angeles Shipbuilding & Dry Dock Co.: Off. Box C, San Pedro, Calif.; Los Angeles, Calif.; Wks. Los Angeles, Harbor, Calif.

Merrill Stevens Shipbuilding Corporation: Off. Jacksonville, Fla.; Wks. Jacksonville, Fla.; Off. San Francisco, Calif.; Wks. Oakland, Calif.

Merchant Shipbuilding Corporation: Off. 165 Broadway. New York. N. Y.: correspondence. Finance Build-

way, New York, N. Y.; correspondence, Finance Building, Philadelphia, Pa.; Wks. Bristol, Pa.

Newburgh Shipyards, Inc.: Off. Newburgh, N. Y.;

Wks. Newburgh, N. Y.
Northwest Steel Co.: Off. Portland, Ore.; Wks. Portland, Ore.

Patterson-McDonald Shipbuilding Co.: Off. Seattle, Wash.; Wks. Seattle, Wash.

Pacific Coast Shipbuilding Co.: Off, First National Bank Building, San Francisco, Calif.; Wks. Suisun Bay, San Francisco, Calif.

Pensacola Shipbuilding Co.: Off. 155 North Clark Street, Chicago; Wks. Pensacola, Fla.

Skinner & Eddy Corporation: Off. Smith Building, Seattle, Wash.; Wks. Seattle, Wash.

Seattle Construction & Dry Dock Co.: Off. Seattle, Wash.; Wash.; Wash.; Wash.; Wash.

Southern Shipbuilding Corporation: Off. Charleston, S. C.; Wks. Charleston, S. C

Sun Shipbuilding Co.: Off. Correspondence, 1428 South Penn Square, Philadelphia, Pa.; Wks. Chester,

Pa. Saginaw Shipbuilding Co.: Off, Saginaw, Mich.; Wks. Saginaw, Mich.

Submarine Boat Corporation: Wks. Newark, N. J. Off. Nassau Street, New York, N. Y.

Western Pipe & Steel Co. of California: Off. San Francisco, Calif.; Wks. South San Francisco, Calif.

York River Shipbuilding Corporation: Off. West Point, Va.; Wks. West Point, Va. Moore & Scott Iron Works.

Builders of Composite Vessels

Mobile Shipbuilding Co.: Off. Mobile, Ala.; Wks. Mobile, Ala.

Kelley Atkinson Construction Co.: Building, Chicago, Ill.; Wks. Mobile, Ala.

Merrill Stevens Co.: Off. Jacksonville, Fla.: Wks. lacksonville, Fla.

Supple & Ballin: Off. Portland, Ore.; Wks. Portland,

Terry Shipbuilding Corporation: Off. Savings Bank & Trust Co., Savannah, Ga.; Wks. Port Wentworth Termina, Savannah, Ga.

Builders of Concrete Vessels

Liberty Shipbuilding Co.: Off. 515 State Street, Boston, Mass.; Wks. Not decided on.

Yards Building Requisitioned Ships

Albina Engine & Machine Works: Off. Portland, Ore.; Wks. Portland, Ore.

Ames Shipbuilding & Dry Dock Co.: Off. Seattle Wash.; Wks. Seattle, Wash.

Bethlehem Steel Co, Off. South Bethlehem, Pa.; Wks. Sparrows Point, Md.

Cramp, William & Sons Ship & Engine Building Co.: Off, Philadelphia, Pa.; Wks. Philadelphia, Pa.

Chester Shipbuilding Co.: Off. 1264 Finance Building, Philadelphia, Pa.; Wks. Chester, Pa.

Craig Shipbuilding Co.: Off. Long Beach, Calif.; Wks. Long Beach, Calif.
Duthie, J. F. & Co.: Off. Seattle, Wash.; Wks. Seattle,

Wash.

Fore River Shipbuilding Corporation: Wks. Quincy. Mass.

Great Lakes Engineering Works: Off. Detroit. Mich.; Wks. Detroit, Mich.

Globe Shipbuilding Co.: perior, Wis. Off. Superior. Wis.: Su-

Hanlon Dry Dock & Shipbuilding Co.: Off. Oakland. Calif.; Wks. Oakland, Calif.

Harlan & Hollingsworth Corporation: Wks. Wilmington, Del.

Manitowoc Shipbuilding Co.: Off. Manitowoc, Wis.; Wks. Manitowoc, Wis.

Moore, Samuel & Sons Corporation: Wks. Elizabeth,

McDougall-Duluth Co.: Off. Duluth, Minn.; Wks. Duluth, Minn.

Newport News Shipbuilding & Dry Dock Co.: Off. Newport News, Va.; Wks. Newport News, Va.

New York Shipbuilding Corporation: Off. Camden, N. J.; Wks. Camden, N. J

New Jersey Shipbuilding Co.: Off. Land Building, Philadelphia, Pa.; Wks. Gloucester, N. Off. Land Title

Pennsylvania Shipbuilding Co.: Off. Land T. Building, Philadelphia, Pa.; Wks. Gloucester, N. J. Off. Land Title

Pusey & Jones Co.: Off. Wilmington, Del.; Wks. Wilmington, Del.

Standard Shipbuilding Co.: Off. 44 Whitehall Street, New York City; Wks. New York, N. Y.

Staten Island Shipbuilding Co.: Off. Port Richmond, New York; Wks. Port Richmond, New York.

Texas Steamship Co.: Off. Bath, Me.; Wks. Bath, Me.

Toledo Shipbuilding Co.: Off. Toledo, Ohio; Wks. Toledo, Ohio.

Tampa Shipbuilding Co.: Off. Tampa, Fla.; Wks. Tampa, Fla.

Union Iron Works: Wks. San Francisco, Calif. Willamette Iron & Steel Works and Northwest Steel Co.: Off. Portland, Ore: Wks. Portland, Ore.

#### Builders of Wood Vessels

Alabama Dry Dock & Shipbuilding Co.: Off. Mobile, Ala.; Wks. Brunswick, Ga.

American Shipbuilding Co.: Off. 11 Broadway, New York City; Wks. Mobile, Ala.

Beaumont Shipbuilding & Dry Dock Co.: Off. Beaumont, Tex.; Wks. Beaumont, Tex.

Babare Bros: Off. Tacoma, Wash.; Wks. Tacoma, Wash.

Benecia Shipbuilding Corporation.: Off. 131 Loidesdorff Street, San Fancisco, Calif.; Wks. Benecia, Calif.

Coast Shipbuilding Co.: Off. 504 Concord Building, Portland, Ore.; Wks. Portland, Ore.

Cumberland Shipbuilding Co.: Off. Portland, Me.; Wks. South Portland, Me.

Coos Bay Shipbuilding Co.: Off. Marshfield, Ore.; Wks. Marshfield, Ore.

Chandler, R. J.: Off. Los Angeles, Calif.; Wks. Wilmington, Los Angeles, Calif.

Dantzler Shipbuilding & Dry Dock Co.: Off. Moss Point, Miss.; Wks. Moss Point, Miss.

Dierks-Blodgett Shipbuilding Co.: Off. Care of Dierks Lumber & Coal Co., Kansas City, Mo.; Wks. Pascagoula, Miss.

Feeney & Bremer Co.: Off. Tillamook, Ore.; Wks. Tillamook, Ore.

The Foundation Co.: Off. Woolworth Building, New York City; Wks.: Passaic River, Newark, N. J.

Fulton Shipbuilding Co.: Off. Los Angeles, Cal., Wks. Head Mormon Channel, Wilmington, Calif.

Freeport Shipbuilding Co.: Off. Freeport, Me.; Wks. South Freeport, Me.

Grays Harbor M. S. Corporation: Off. Aberdeen, Wash.; Wks. Grays Harbor, Wash.

Groton Iron Works: Off. 50 Broad Street, New York; Wks. Noank, Conn.

Grant Smith-Porter-Guthrie Co.: Off. Foot Baltimore Street, St. Johns, Portland, Ore.; Wks. St. Johns, Ore

Gildersleeve Ship Construction Co.: Off. Gildersleeve, Conn.; Wks. Gildersleeve, Conn.

Geo. A. Gilchrost.: Off. 60 Main Street, Thomaston, Me.; Wks. Thomaston, Me.

Hillyer-Sperring-Dunn Co.: Off. Jacksonville, Fla.; Wks. Jacksonville, Fla.

Johnson Shipyards Corporation: Off. 2641 Richmond Ter., Mariners Harbor, Shooters Island, N. Y.; Wks. Mariners Harbor, N. Y.

Kingston Shipbuilding Co.: Off. Kingston, N. Y.; Wks. Rondout Creek, Kingston, N. Y.

Kruse & Banks Shipbuilding Co.: Off. North Bend, Ore.; Wks. North Bend, Ore.; Off. Bath, Me.; Wks. Bath, Me.

Lake & Ocean Navigation Co.: Off. Room 1124, 208 South La Salle Street, Chicago, Ill.; Wks. Sturgeon Bay, Wis.; delivery, Montreal, Can.

Lone Star Shipbuilding Co.: Off. 111 Broadway, New York; Wks. Beaumont, Tex.

Maryland Shipbuilding Co.: Off. Lexington Building, Baltimore, Md.; Wks. Sollers Point, Md.

McBride & Law: Off. Beaumont, Tex.; Wks. Naches River, Beaumont, Tex.

J. N. McCammon: Off. Houston, Tex.; Wks. Beaumont, Tex.

Murnan Shipbuilding Corporation: Off. 836 Commercial Trust Building, Philadelphia, Pa.; Wks. Pinto Island, Mobile, Ala.

J. M. Murdock: Off. Jacksonville, Fla.; Wks. Jacksonville, Fla.

Midland Bridge Co.: Off. 504-510 Midland Building, Kansas City, Mo.; all mail to Houston Tex.; Wks. Ship Channel, Houston, Tex.

Morey & Thomas: Off. Postoffice box 619, Jacksonville, Fla.; Wks. St. Johns River, Jacksonville, Fla.

Meacham & Babcock Shipbuilding Co.: Off. Seattle, Wash.: Wks. Salmon Bay, Wash.

McEachern Ship Co.: Off. Portland, Ore.; Wks. Astoria, Ore.

Newcomb Lifeboat Co.: Off. Hampton, Va.; Wks. Hampton, Va.

National Shipbuilding Co.: Off. 120 Broadway, New York; Wks. Orange, Tex.

North Carolina Shipbuilding Co.: Off. Morehead City, N. C.; Wks. Morehead City, N. C.

Nilson & Kelez Shipbuilding Corporation: Off. Seattle, Wash.; Wks. Seattle, Wash.

Peninsula Shipbuilding Co.: Off. Portland, Ore.; Wks. Portland, Ore.

Portland Ship Ceiling Co.: Off. 130 Commercial Street, Portland, Me.; Wks. Portland, Me.

Potomac Shipbuilding Co.: Off. Colorado Building, Washington, D. C.; Wks. Quantico, Va.

Rodgers, Geo. F. & Co.: Off. Astoria, Ore.; Wks. Astoria, Ore.

G. M. Standifer Construction Corporation: Off. 611 Northwestern National Bank Building, Portland, Ore.; Wks. Portland, Ore.

Sloan Shipyards Corporation: Off. Olympia, Wash.; Wks. Olympia and Seattle, Wash.

Sanderson & Porter: Off. 52 Williams Street, New York City; Wks. Willapa Harbor, Wash.

Ship Construction & Trading Co.: Off. 50 Broadway, New York; Wks. Stonington, Conn.

Henry Smith & Sons Co.: Off. 7 East German Street, Baltimore, Md.; Wks. Baltimore, Md.

Southern Dry Dock & Shipbuilding Co.: Off. Orange, Tex.; Wks. Orange, Tex.

L. H. Shattuck, Inc.: Off. Manchester, N. H.; Wks. Piscataqua River, Portsmouth, N. H.

Sommarstrom Shipbuilding Co.: Off. Care Maj. C. L. Tilden, 217 Front Street, San Francisco, Calif.; Wks. Columbia City, Orc.

Seaborn Shipyards Co.: Off 812 Leary Building, Seattle, Wash.; Wks. Tacoma, Wash.

St. Helens Shipbuilding Co.: Off. 900 Fife Building, San Francisco, Calif.; Wks. St. Helens, Ore.

Sandy Point Shipbuilding Corporation: Off. Sandy Point, Me.; Wks. Sandy Point, Me.

Tacoma Shipbuilding Co.: Off. Tacoma, Wash.; Wks. Tacoma, Wash.

Traylor Shipbuilding Corporation: Off. Allentown, Pa.; Cornwalls Heights, Pa.; Wks. Cornwalls Heights, Pa.

Tampa Dock Co.: Off. Tampa, Fla.; Wks. Tampa, Fla.

Universal Shipbuilding Co.: Off. 515 Union National Bank Building, Houston, Tex.; Wks. Houston Ship Canal, Harris County, Tex.

Union Bridge & Construction Co.: Off. Morgan City, La.; Wks. Morgan City, La.

U. S. Maritime Corporation: Off. 502 Union Savings Bank Building, Washington, D. C.; Wks. Brunswick, Ga

Wilson Shipbuilding Co.: Off. Astoria, Ore.; Wks. Astoria, Ore.

Wrights Shipyards: Off. Tacoma, Wash.; Wks. Tacoma, Wash.

Hodge Ship Co.: Wks. Moss Point, Miss.

Housatonic Shipbuilding Co., Inc.: Off. Moss Point, Miss.; Off. San Francisco, Calif.; Off. Stratford, Conn.; Wks. Housatonic River. Stratford, Conn.

Heldenfels Bros.: Off. Beeville, Tex.; Wks. Near Port Aransas, Tex.

Jahncke Shipbuilding Co., Inc.: Off. New Orleans La.; Wks. Tchefuncta River, La.

#### DIFFERENCE IN TIME When it is Noon Today from Vancouver to San Diego

in—	it is	in—	it is
Alexandria	10:00 pm	Madagascar	11:00 pm
Algiers	8:00 pm	Malta	9:00 pm
Amsterdam	8:20 pm	Manila*	4:00 am
	-	Marseilles	8:00 pm
Argentine	3:43 pm	Martinique	4:00 pm
Astrakhan	10:01 pm	Mauritius	12:00 m
Australia, Wstn.*	4:00 am	Melbourne*	6:00 am
Australia, Ctl. *	5:30 am	Mexico City	1:24 pm
Australia, Estn. *	6:00 am	Montevideo	4:15 pm
Austria-Hungary	9:00 pm	Montreal	3:00 pm 10:01 pm
Azores	6:00 pm	Moscow Newfoundland .	4:30 pm
Belgium	8:00 pm	New York	3:00 pm
Belgrade	9:00 pm	New Orleans	2:00 pm
Bogota	3:03 pm	New Zealand*	7:30 am
Bombay	1:30 pm	Nicaragua	2:15 pm
Borneo*	4:00 am	Nome	9:00 am
Boston	3:00 pm	Norway	9:00 pm
Brazil	5:00 pm	Osaka*	5:00 am
Brisbane*	6:00 am	Panama	3:00 pm
Buenos Aires	3:43 pm	Paris	8:00 pm
Bukarest	10:00 pm	Peking*	4:00 am
Cairo	10:00 pm	Pernambuca	5:00 pm
Calcutta*	1:53 am	Perth*	4:00 am
Calgary	1:00 pm	Peru	3:00 pm
Canton*	4:00 am	Petrograd	10:01 pm
Cape of Good Hope	9:25 pm	Philadelphia Porto Rico	3:00 pm 4:00 pm
Cape Town	10:00 pm	Portugal	7:30 pm
Caracas	3:30 pm	Quito	2:46 pm
Cheyenne	1:00 pm	Rio de Janeiro.	5:00 pm
Chicago	2:00 pm	Saigon, China .*	3:07 am
Chile	3:30 pm	St. John, N. B.	4:00 pm
China (Saigon) * Colombo*	3:07 am	St. Louis	2:00 pm
Colombo*	1:30 am	Samoa* San Jose C. R	8:30 am
Costa Rica	3:30 pm	San Jose C. R	2:24 pm
Colombia (Bo-		San Juan, P. R.	4:00 pm
gota) .,	3:00 pm	San Salvador	2:03 pm
Chosen*	5:00 am	Santiago, Chile.	3:00 pm
Cuba	3:30 pm	Scotland	8:00 pm
Denmark	9:00 pm	Shanghai, China*	4:00 am 3:00 am
Denver Ecuador	1:00 pm 2:45 pm	Singapore* Sitka	11:00 am
Egypt	10:00 pm	Smyrna	10:00 pm
England	8:00 pm	Spain	8:00 pm
Fairbanks	10:00 am	Suez	10:00 pm
Fiji Islands*	7:54 am	Sweden	9:00 pm
France	8:00 pm	Switzerland	9:00 pm
Germany	9:00 pm	Tanana	10:00 am
Gibraltar	8:00 pm	Tientsin*	4:00 am
Greece	9:30 pm	Tokyo*	5:00 am
Guam*	5:30 am	Toronto	3:00 pm
Havana	2:31 pm	Tunis	9:00 pm
Holland	8:00 pm	Tutuila*	8:30 am
Honduras	2:00 pm	Turkey	10:00 pm
Hongkong* Honolulu	4:00 am 9:30 am	Uruguay Valdez	4:15 pm 10:00 pm
India (Madras) *	1:30 am	Vandez Venezuela	3:30 pm
Ireland	7:30 am	Vienna	9:00 pm
Italy	9:00 pm	Vladivostok, Ra.*	5:00 am
Jamaica	3:00 pm	Warsaw	10:01 pm
Japan*	5:00 am	Washington	3:00 pm
Java*	3:00 am	Winnipeg	2:00 pm
Johannesburg	10:00 pm	Yokohama*	5:00 am
Lima	3:00 pm	* Tomorrow.	

#### DISTANCE OF OBJECTS AT SEA

(The observer's eve being supposed even at sea level)

Height Feet	Dis- tance Naut. Miles	Height Feet	Dis- tance Naut. Miles	Height Feet	Dis- tance Naut. Miles
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 1 22 23 24 25 26 27 28 29 30 1 32 33 34 35 36 37 38 9 41 42	1.1 1.6 2.3 2.6 3.0 3.2 3.4 3.6 3.8 4.1 4.3 4.4 4.6 5.1 5.5 5.5 5.6 5.7 5.8 6.1 6.2 6.4 6.5 6.7 7.0 7.1 7.3 7.4	43 44 45 46 47 48 49 50 55 60 65 70 75 80 85 90 95 100 105 110 125 130 135 140 145 150 160 170 210 220 230 240 250 270 280 290	7.5 7.6 7.7 7.8 7.9 8.0 8.1 8.2 8.5 8.9 9.3 10.6 10.9 11.5 11.8 12.1 12.3 12.6 12.9 13.1 13.4 13.4 13.8 14.1 14.5 15.8 16.3 17.8 17.8 17.8 17.8 17.8 17.8 17.8 17.8	300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 520 540 560 580 600 620 640 660 680 700 720 740 780 880 880 880 900 920	19.9 20.2 20.6 20.9 21.2 21.5 21.8 22.4 22.7 23.0 23.2 23.6 24.1 24.4 24.7 25.2 25.5 25.7 26.7 27.2 27.2 27.7 28.6 29.1 29.5 29.9 30.8 31.2 31.7 32.9 33.3 33.7 34.1 34.9

Example: From what distance will a hill 300 feet high be visible to an observer 20 feet above the sea?

To an observer on the summit of the hill the horizon would be 19.9 miles distant, and to the observer in the example it would be 5.1 miles distant, hence two such observers facing one another would just see each other at a distance of 19.9 plus 5.1 miles, which is therefore the distance the hill would be visible.

Custom House and Insurance Brokers Foreign and Domestic Forwarders

Head Office 1, Kitanaka-Dori 1-Chome Yokohama

### KAI TSU GOMEI KWAISHA

Tel. No. Sannomiya 1262
Tel. No. Sannomiya 1262
Cable Address:
Kaitsusha Kobe
Code: Western Union

## Sunde & d'Evers Co. SEATTLE. WASH. AIL MAKER

# **Money Conversion Tables**

#### **RUSSIAN RUBLES**

# RUSSIAN RUBLES AT \$0.30, CONVERTED INTO U. S. AND CANADIAN CURRENCY

Note.—The price of rubles is constantly fluctuating; this table represents the normal rate of exchange. Quotations Mar. 1, 1919; bid \$0.16, asked \$.1625 (pre-war issue).

Rbis.	\$	Rbls.	\$	Rbls.	\$	Rbls.	\$
1	\$ .30	35	\$10.50	69	\$20.70	400	\$ 120.00
2	.60	36	10.80	70	21.00	500	150.00
3	.90	37	11.10	71	21.30	600	180.00
4	1.20	38	11.40	72	21.60	700	210.00
5	1.50	39	11.70	73	21.90	800	240.00
2 3 4 5 6 7 8	1.80	40	12.00	74	22.20	900	270.00
7	2.10	41	12.30	75	22.50	1,000	300.00
8	2.40	42	12.60	76	22.80	1,500	450.00
	2.70	43	12.90	77	23.10	2,000	600.00
10	3.00	44	13.20	78	23.40	2,500	750.00
11	3.30	45	13.50	79	23.70	3,000	900.00
12	3.60	46	13.80	80	24.00	3,500	1,050.00
13	3.90	47	14.10	81	24.30	4,000	1,200.00
14	4.20	48	14.40	82	24.60	4,500	1,350.00
15	4.50	49	14.70	83	24.90	5,000	1,500.00
16	4.80	50	15.00	84	25.20	5,500	1,650.00
17	5.10	51	15.30	85	25.50	6,000	1,800.00
18	5.40	52	15.60	86	25.80	6,500	1,950.00
19	5.70	53	15.90	87	26.10	7,000	2,100.00
20	6.00	54	16.20	88	26.40	7,500	2,250.00
21	6.30	55	16.50	89	26.70	8,000	2,400.00
22	6.60	56	16.80	90	27.00	8,500	2,550.00
23	6.90	57	17.10	91	27.30	9,000	2,700.00
24	7.20	58	17.40	92	27.60	9,500	2,850.00
25	7.50	59	17.70	93	27.90	10,000	3,000.00
26	7.80	60	18.00	94	28.20	20,000	6,000.00
27	8.10	61	18.30	95	28.50	30,000	9,000.00
28 .	8.40	62	18.60	96	28.80	40,000	12,000.00
29	8.70	63	18.90	97	29.10	50,000	15,000.00
30	9.00	64	19.20	98	29.40	60,000	18,000.00
31	9.30	65	19.50	99	29.70	70,000	21,000.00
32	9.60	66	19.80	100	30.00	89,000	24,000.00
33	9.90	67	20.10	200	60.00	90,000	27,000.00
34	10.20	68	20.40	300	90.00	100,000	30,000.00

#### FRANCS

FRANCS (FRANCE, BELGIUM AND SWITZER-LAND); LIRAS (ITALY); DRACHMA (GREECE); PESETA (SPAIN); BOLIVAR (VENEZUELA); MARK (FINLAND) AT \$0.193, CONVERTED IN-TO U. S. CURRENCY

Fcs.	\$	Fcs.	\$	Fcs.		Fcs.	\$
1	.193	35	6.755	69	13 317	400	77.20
2	.386	36	6.948	70	13.510	500	96.50
3	.579	37	7.141	71	13.703	600	115.80
4	.772	38	7 .334	72	13.896	700	135.10
2 3 4 5 6	.965	39	7.527	73	14.089	800	154.40
6	1.158	40	7.720	74	14.282	900	173.70
7	1.351	41	7.913	75	14 .475	1,000	193.00
8	1.544	42	8.106	76	14.668	1,500	289.50
9	1.737	43	8.299	77	14.861	2,000	386.00
10	1.930	44	8.492	78	15.054	2,500	482.50
11	2.123	45	8.685	79	15.247	3,000	579.00
12	2.316	46	8.878	80	15.440	3,500	675.50
13	2.509	47	9.071	81	15.633	4,000	772.00
14	2.702	48	9.264	82	15 .826	4,500	868.50
15	2.895	49	9.457	83	16.019	5,000	965.00
16	3.088	50	9.650	84	16.212	5,500	1,061.50
17	3.281	51	9.843	85	16.405	6,000	1,158.00
18	3.474	52	10.036	86	16.598	6,500	1,254.50
19	3.667	53	10.229	87	16.791	7,000	1,351.00
20	3.860	54	10.422	88	16.984	7,500	1,447.50
21	4.053	55	10.615	89	17.177	8,000	1,544.00
22	4.246	56	10.808	90	17.370	8,500	1.640.50
23	4.439	57	11.001	91	17.563	9,000	1,737.00
24	4.632	58	11.194	92	17.756	9,500	1,833.50
25	4.825	59	11.387	93	17.949	10,000	1,930.00
26	5.018	60	11.580	94	18.142	20,000	3,860.00
27	5.211	61	11.773	95	18.335	30,000	5,790.00
28	5.404	62	11.966	96	18.528	40,000	7,720.00
29	5.597	63	12.159	97	18.721	50,000	9,650.00
30	5.790	64	12.352	98	18.914	60,000	11,580.00
31	5.983	65	12.545	99	19.107	70,000	13,210.00
32	6.176	66	12.738	100	19.30	80,000	15,440.00
33	6.369	67	12.931	200	38.60	90,000	17,370.00
34	6.562	68	13.124	300	57.90	100,000	19,300.00

#### DENMARK, NORWAY AND SWEDEN

## CROWNS \$0.268, CONVERTED INTO U. S. AND CANADIAN CURRENCY

The above table shows the normal rate of exchange, but due to the conditions produced by the war the rate at the present time is over .30.

Crs.	\$	Crs.	\$	Crs.	\$	Crs.	\$
1	.268	35	9.380	69	18.492	400	107.20
	.536	36	9.648	70	18.760	500	134.00
3	.804	37	9.916	71	19.028	600	160.80
2 3 4	1.072	38	10.184	72	19.296	700	187.60
5	1.340	39	10.452	73	19.564	800	214.40
5 6 7	1.608	40	10.720	74	19.832	900	241.20
7	1.876	41	10.988	75	20.100	1.000	268.00
8	2.144	42	11.256	76	20.368	1,500	402.00
9	2.412	43	11.524	77	20.636	2,000	536.00
10	2.680	44	11,792	78	20,904	2.500	670.00
11	2.948	45	12.060	79	21.172	3.000	804.00
12	3.216	46	12.328	80	21.440	3,500	938.60
13	3.484	47	12.506	81	21.708	4,000	1.072.00
14	3.752	48	12.864	82	21.976	4.500	1,206.00
15	4.020	49	13.132	83	22.244	5.000	1,340.00
16	4.288	50	13.400	84	22.512	5.500	1,474.00
17	4.556	51	13.668	85	22.780	6.000	1,608.00
18	4.824	52	13.936	86	23.048	6.500	1,742,00
19	5.092	53	14.204	87	23.316	7.000	1,876.00
20	5.360	54	14.472	88	23.584	7,500	2,010.00
21	5.628	55	14.740	89	23.852	8.000	2,144.00
22	5.896	56	15.008	90	24.120	8.500	2,278.00
23	6.164	57	15.276	91	24.388	9,000	2,412.00
24	6.432	58	15.544	92	24.656	9.500	2,546.00
25	6.700	59	15.812	93	24.924	10,000	2,680.00
26	6.698	60	16.080	94	25.192	20,000	5,360.00
27	7.236	61	16.348	95	25.460	30,000	8,040.00
28	7.504	62	16.616	96	25.728	40,000	10.720.00
29	7.772	63	16.884	97	25,996	50.000	13,400.00
30	8.040	64	17,152	98	26.264	60,000	16,080.00
31	8.308	65	17.420	99	26.532	70,000	18,760.00
32	8.576	66	17.688	100	26.800	80,000	21,440.00
33	8.844	67	17.956	200	53.600	90,000	24,120.00
34	9.112	68	18.224	300	80.40		26,800.00

#### **ARGENTINE PESOS**

PESOS (ARGENTINE REPUBLIC) AND GOUR-DES (HAYTI) AT \$0.965, CONVERTED INTO U. S. CURRENCY

Pesos	\$	Pesos	\$	Pesos	. \$	Pesos	\$
1	.965	35	33.775	69	66.585	400	386.00
2 3 4 5 6 7	1.930	36	34 .740	70	67 .550	500	482.50
3	2.895	37	35.705	71	68.515	600	579.00
4	3.860	38	36.670	72	69 . 480	700	675.50
5	4.825	39	37 .635	73	70 .445	800	772.00
6	5 790	40	38.600	74	71.410	900	868.50
7	6.755	41	39.565	75	72.375	1,000	965.00
8 9	7.720	42	40 .530	76	73 .340	1,500	1,447.50
9	8.685	43	41.495	77	74 .305	2,000	1,930.00
10	9.650	44	42 .460	78	75.270	2,500	2,412.50
11	10.615	45	43 .425	79	76.235	3,000	2,895.00
12	11.580	46	44 390	80	77 .200	3,500	3,377.50
13	12.545	47	45.355	81	78.165	4,000	3,860.00
14	13.510	48	46 .320	82	79.130	4.500	4,342.50
15	14.475	49	47 .285	83	80.095	5,000	4.825.00
16	15.440	50	48.250	84	81 .060	5,500	5,307.50
17	16.405	51	49.215	85	82.025	6,000	5,790.00
18	17.370	52	50.180	86	82.990	6,500	6,272.50
19	18.335	53	51.145	87	83 .955	7,000	6,755.00
20	19.300	54	52 .110	88	84 .920	7,500	7,237.50
21	20 . 265	55	53.075	89	85 .885	8,000	7,720.00
22	21 .230	56	54.040	90	86.850	8,500	8,202.50
23	22.195	57	55.005	91	87 .815	9,000	8,685.00
24	23 .160	58	55.970	92	88,780	9,500	9,167.50
25	24 . 125	59	56.935	93	89 .745	10,000	9,650.00
26	25.090	60	57,900	94	90,710	20,000	19,300.00
27	26.055	61	58 .865	95	91.675	30,000	28,950.00
28	27.020	62	59.830	96	92.640	40,000	38,600,00
29	27.985	63	60.795	97	93 .605	50,000	48,250,00
30	28.950	64	61.760	98	94.570	60,000	57,900.00
31	29.915	65	62.725	99	95.535	70,000	67,550.00
32	30.880	66	63.690	100	96.50	80,000	77,200.00
33	31.845	67	64.655	200	193.00	90,000	86,850.00
34	32.810	68	65 .620		289.50	100,000	96,500.00

#### **PORTUGUESE MILREIS**

1	4.00			Mil.	\$	Mil.	
	1.08	35	37.80	69	74.52	400	432.00
2	2.16	36	38.88	70	75.60	500	540.00
3	3.24	37	39.96	71	76.68	600	648.00
2 3 4	4.32	38	41.04	72	77.76	700	756.00
5 6 7 8 9	5.40	39	42.12	73	78.84	800	864.00
6	6.48	40	43.20	74	79.92	900	972.00
7	7.56	41	44.28	75	81.00	1,000	1,080.00
8	8.64	42	45.36	76	82.08	1,500	1,620.00
	9.72	43	46.44	77	83.16	2,000	2,160.00
10	10.80	44	47.52	78	84.24	2,500	2,700.00
11	11.88	45	48.60	79	85.32	3,000	3,240.00
12	12.96	46	49.68	80	86.40	3,500	3,780.00
13	14.04	47	50.76	81	87.48	4,000	4,320.00
14	15.12	48	51.84	82	88.56	4,500	4,860.00
15	16.20	49	52.92	83	89.64	5,000	5,400.00
16	17.28	50	54.00	84	90.72	5,500	5,940.00
17	18.36	51	55.08	85	91.80	6,000	6,480.00
18	19.44	52	56.16	86	92.88	6,500	7,020.00
19	20.52	53	57.24	87	93.96	7,000	7,560.00
20	21.60	54	58.32	88	95.04	7,500	8,100.00
21	22.68	55	59.40	89	96.12	8,000	8,640.00
22	23.76	56	60.48	90	97.20	8,500	9,180.00
23	24.84	57	61.56	91	98.28	9,000	9,720.00
24	25.92	58	62.64	92	99.36	9,500	10,260.00
25	27.00	59	63.72	93	100.44	10,000	10,800.00
26	28.08	60	64.80	94	101.52	20,000	21,600.00
27	29.16	61	65.88	95	102.60	30,000	32,400.00
28	30.24	62	66.96	96	103.68	40,000	43,200.00
29	31.32	63	68.04	97	104.76	50,000	54,000.00
30	32.40	64	69.12	98	105.84	60,000	64,800.00
31	33.48	65	70.20	99	106.92	70,000	75,600.00
32	34.56	66	71.28	100	108.00	80,000	86,400.00
33	35.64	67	72.36	200	216.00	90,000	97,200.00
34	36.72	68	73.44	300	324.00	100,000	108,000.00

#### **DUTCH GUILDERS**

PORTUGUESE MILREIS AT \$1.08, CONVERTED INTO U. S. AND CANADIAN CURRENCY

AT \$0.402, CONVERTED INTO U. S. AND CANADIAN CURRENCY

Florin	\$	Florin	\$	Florin	\$	Florin	\$
1	.402	35	14.070	69	27.738	400	160.80
1 2 3 4 5 6 7 8	.804	36	14 .472	70	28.140	500	201.00
3	1.206	37	14.874	71	28.542	600	241.20
4	1.608	38	15.276	72	28.944	700	281.40
5	2.010	39	15 .678	73	29.346	800	321.60
6	2.412	40	16.080	74	29.748	900	361.80
7	2.814	41	16.482	75	30.150	1,000	402.00
8	3.216	42	16.884	76	30.552	1,500	603.00
9	3.618	43	17.286	77	30.954	2,000	804.00
10	4.020	44	17.688	78	31.356	2,500	1,005.00
11	4.422	45	18.090	79	31.758	3,000	1,206.00
12	4.824	46	18.492	80	32.160	3,500	1,407.00
13	5.226	47	18.894	81	32.562	4,000	1,608.00
14	5.629	48	19.296	82	32.964	4,500	1,809.00
15	6.030	49	19.698	83	33 .366	5,000	2,010.00
16	6.432	50	20.100	84	33.768	5,500	2,211.00
17	6.834	51	20.502	85	34.170	6,000	2,412.00
18	7.236	52	20.904	86	34.572	6,500	2,613.00
19	7.638	53	21.306	87	34.974	7,000	2,814.00
20	8.040	54	21.708	88	35.376	7,500	3,015.00
21	8.442	55	22.110	89	35.778	8,000	3,216.00
22	8.844	56	22.512	90	36.180	8,500	3,417.00
23	9.246	57	22.914	91	36.582	9,000	3,618.00
24	9.648	58	23.316	92	36.984		3,819.00
25	10.050	59	23.718	93	37.386	10,000	4,020.00
26	10.452	60	24.120	94	37.788	20,000	8,040.00
27	10.854	61	24 .522	95	38,190	30,000	12,060.00
28	11.256	62	24.924	96	38.592	40,000	16,080.00
29	11.658	63	25.326	97	38.994	50,000	20,100.00
30	12.060	64	25.728	98	39.396	60,000	24,120.00
31	12.462	65	26.130	99	39.798	70,000	28,140.00
32	12.864	66	26.532	100	40.20	80,000	32,160.00
33	13.266	67	26.934	200	80.40	90,000	36,180.00
34	13.668	68	27 .336	300	120,60 l	100,000	40,200.00

#### TURKISH PIASTERS

# TURKISH PIASTER AT \$0.044, CONVERTED INTO U. S. AND CANADIAN CURRENCY

				1		1	
P	\$	, b	\$	P	\$	Piasters	\$
1	.044	36	1.584	71	3.124	700	30.80
ž	.088	37	1.628	72	3.168	800	35.20
3	132	38	1.672	73	3.212	900	39.60
	176	39	1.716	74	3.256	1,000	44.00
7	220	40	1.760	75	3.300	1.500	66.00
4 5 6 7 8 9	264	41	1.804	76	3,344	2,000	88.00
9	.308	42	1.848	77	3.388	2,500	110.00
	.352	43	1.892	78	3.432	3,000	132.00
8	.396	44	1.936	79	3.476	3,500	154.00
		45	1.980	80	3.520	4,000	176.00
10	.440	46	2.024	81	3.564	4,500	198.00
11	.484	47		82	3.608	5.000	220.00
12	.528		2.068	83	3.652	5,500	242.00
13	.572	48	2.156	84	3.696	6,000	264.00
14	.616	49		85	3.740	6,500	286.00
15	.660	50	2.200	86	3.784	7.000	308.00
16	.704	51	2.244		3.828	7,500	330.00
17	.748	52	2.288	87			352.00
18	.792	53	2.332	88	3.872	8,000 8,500	374.00
19	.836	54	2.376	89	3.916		374.00 396.00
20	.880	55	2.420	90	3.960	9,000	
21	.924	56	2.464	91	4.004	9,500	418.00
22	.968	57	2.508	92	4.048	10,000	440.00
23	1.012	58	2.552	93	4.092	20,000	880.00
24	1.056	59	2.596	94	4.136	30,000	1,320.00
25	1.100	60	2.640	95	4.180	40,000	1,760.00
26	1.144	61	2.684	96	4.224	50,000	2,200.00
27	1.188	62	2.728	97	4.268	60,000	2,640.00
28	1.232	63	2.772	98	4.312	70,000	3,080.00
29	1.276	64	2.816	99	4.356	80,000	3,520.00
30	1.320	65	2.860	100	4.40	90,000	3,960.00
31	1.364	66	2.904	200	8.80	100,000	4,400.00
32	1.408	67	2.948	300	13.20	200,000	8,800.00
33	1.452	68	2.992	400	17.60	300,000	13,200.00
34	1.496	69	3.036	500	22.00	400,000	17,600.00
35	1.540	70	3.080	600	26.40	500,000	22,000.00

#### **ECUADOR AND PERU**

ECUADOR SUCRE AND SOL OF PERU AT \$0.487, CONVERTED INTO U. S. AND CANADIAN CURRENCY

`s_	\$	s	\$	S	8	s	\$
1	.487	35	17.045	69	33.603	400	194.80
3	.974	36	17.532	70	34.090	500	243.50
3	1.461	37	18.019	71	34.577	600	292.20
4 5 6 7	1.948	38	18.506	72	35.064	700	340.90
5	2.435	39	18.993	73	35.551	800	389.60
6	2.922	40	19.480	74	36.038	900	438.30
7	3.409	41	19.967	75	36.525	1,000	487.00
8	3.896	42	20.454	76	37.012	1,500	730.50
9	4.383	43	20.941	77	37.499	2,000	974.00
10	4.770	44	21 .423	78	37.986	2,500	1,217.50
11	5.357	45	21 .915	79	38.473	3,000	1,461.00
12	5.844	46	22.402	80	38,960	3,500	1,704.50
13	6.331	47	22.889	81	39.447	4,000	1,948.00
14	6.818	48	23.376	82	39.934	4,500	2,191.50
15	7.305	49	23 .863	83	40.421	5,000	2,435.00
16	7.792	50	24.350	84	40.908	5,500	2,678.50
17	8.279	51	24.837	85	41.395	6,000	2,922.00
18	8,766	52	25.324	86	41.883	6,500	3,165.50
19	9.253	53	25.811	87	42.369	7,000	3,409.00
20	9.740	54	26,298	88	42,856	7,500	3,652.50
21	10.227	55	26.785	89	43.343	8.000	3.896.00
22	10.714	56	27.272	90	43 .830	8,500	4,139.50
23	11.201	57	27.759	91	44.317	9,000	4,383.00
24	11.688	58	28.246	92	44.804	9.500	4,626.50
25	12.175	59	28.733	93	45.291	10.000	4.870.00
26	12.662	60	29.220	94	45.778	20.000	9.740.00
27	13.149	61	29.707	95	46.265	30,000	14.610.00
28	13.636	62	30.194	96	46.752	40.000	19.480.00
29	14 .123	63	30.681	97	47 .239	50,000	24,350.00
30	14.610	64	31.168	98	47.726	60,000	29,220.00
31	15.097	65	31.655	99	48.213	70,000	34,090.00
32	15.584	66	32,142	100	47.70	80,000	38.960.00
33	16.071	67	32.629	200	97.40	90,000	43.830.00
34	16.558	68	33.116	300	146.10	100.000	48.700.00

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#### JAPANESE AND MEXICAN MONEY JAPANESE YENS AND MEXICAN DOLLARS AT \$0.498. CONVERTED INTO U.S. CURRENCY

Y	\$	Y	\$	Y	\$	Y	\$
1	.498	35	17.430	69	34.362	400	199,20
	.996	36	17.928	70	34.860	500	249.00
3	1.494	37	18.426	71	35.358	600	298,80
4	1.992	38	18,924	72	35.856	700	348.60
2 3 4 5 6 7	2.490	39	19.422	73	36.354	800	398.40
6	2.988	40	19.920	74	36.852	900	448.20
7	3.486	41	20.418	75	37.350	1,000	498.00
8 9	3.984	42	20.916	76	37.848	1,500	747.00
9	4.482	43	21.414	77	• 38.346	2,000	996.00
10	4.980	44	21.912	78	38.844	2,500	1,245.00
11	5.478	45	22.410	79	39.342	3,000	1,494.00
12	5,976	46	22.908	80	39.840	3,500	1,743.00
13	6.474	47	23.406	81	40.338	4,000	1,992.00
14	6.972	48	23.904	82	40.836	4,500	2,241.00
15	7.470	49	24.402	83	41.334	5,000	2,490.00
16	7.968	50	24.900	84	41.832	5,500	2,739.00
17	8.466	51	25.398	85	42.330	6,000	2,988.00
18	8,964	52	25.896	86	42.828	6,500	3,237.00
19	9.462	53	26.394	87	43.326	7,000	3,486.00
20	9.960	54	26.892	88	43.824	7,500	3,735.00
21	10.458	55	27.390	89	44.322	8,000	3,984.00
22	10.956	56	27.888	90	44.820	8,500	4,233.00
23	11.454	57	28.386	91	45.318	9,000	4,482.00
24	11.952	58	28.884	92	45.816	9,500	4,731.00
25	12.450	59	29.382	93	46.314	10,000	4,980.00
26	12.948	60	29.880	94	46.812	20,000	9,960.00
27	13.446	61	30.378	95	47.310	30,000	14,940.00
28	13.944	62	30.876	96	47.808	40,000	19,920.00
29	14.442	63	31.374	97	48.306	50,000	24,900.00
30	14.940	64	31.872	98	48.804	60,000	29,880.00
31	15.438	65	32.370	99	49.302	70,000	34,860.00
32	15.936	66	32.868	100	49.80	80,000	39,840.00
33	16.434	67	33.366	200	99.60	90,000	44,820.00
34	l 16.932 l	68	33.864	l 300	149.40	IL 100,000	49,800.00

#### **ENGLISH POUNDS**

ENGLISH POUNDS STERLING AT \$4.8665, CON-VERTED INTO U.S. CURRENCY

Penny=\$0.020277 1-2 1 Shilling=\$0.243325

S	\$	£	\$	£	\$	£	\$
1	.24	1	4.87	38	184.93	75	364.99
ż	.49	1 2 3 4 5 6	9.73	39	189.79	76	369.85
3	73	3	14.60	40	194.66	77	374.72
4	.97	ă	19.47	41	199.53	78	379.59
ŝ	1.22	5	24.33	42	204.39	79	384.45
š	1.46	ا م	29.20	43	209.26	8ó	389.32
2 3 4 5 6 7	1.70	7	34.07	44	214.13	81	394.19
8 9	1.95	8	38,93	45	218.99	82	399.05
9	2.19	ğ	43.80	46	223.86	83	403.92
10	2.43	10	48.67	47	228.73	84	408.79
11	2.68	11	53.53	58	233.59	85	413.65
12	2.92	12	58.40	49	238.46	86	418.52
13	3.16	13	63.26	50	243.33	87	423.39
14	3.41	14	68.13	51	248.19	88	428.25
15	3.65	15	73.00	52	253.06	89	433.12
16	3.89	16	77.86	53	257.92	90	437.99
17	4.14	17	82.73	54	262.79	91	442.85
18	4.38	18	87.60	55	267.66	92	447.72
19	4.62	19	92.46	56	272.52	93	452.58
		20	97.33	57	277.39	94	457.45
		21	102.20	58	282.26	95	462.32
		22	107.06	59	287.12	96	467.18
		23	111.93	60	291.99	97	472.05
		24	116.80	61	296.86	98	476.92
		25	121.66	62	301.72	99	481.78
	1	26	126.53	63	306.59	100	486.65
1	1	27	131.40	64	311.46	200	973.30
	ļ .	28	136.26	65	316.32	300	1,459.95
- 1	l l	29	141.13	66	321.19	400	1,946.60
	l i	30	146.00	67	326.06	500	2,433.25
		31	150.86	68	330.92	600	2,919.90
		32 33	155.73	69 70	335.79	700	3,406.55
			160.59		340.66	800	3,893.20
		34 35	165.46 170.33	71	345.52	900	4,379.85
	- [		175.19	72 73	350.39 355.25	1,000	4,866.50
l	li li	36 37	180.06	74			
ı	l)	J/ (	190.00	/4	360.12		1

Four farthings, 1 penny (d); 12 pence, one shilling (s.) 2s., 1 florin; 2½ shillings, half crown; 4s. double florin; 5 shillings, crown; 10s., half sovereign or half pound; 20 shillings, pound (£) gold.

The unit of English money is the pound sterling, the value of which in United States money varies with the rate of exchange, but as an average is about \$4.8665.

To reduce pounds shillings and pence into dollars

To reduce pounds, shillings and pence into dollars and cents, first reduce the pounds to shillings, if any, and multiply by 24½; if any pence are given increase the product by twice as many cents as there are pence. Example: Reduce £4 7s. 11d. to dollars and cents. £4×20+7=87s.

 $87s. \times 24\frac{1}{3} + 22 = $21.39.$ 

To reduce pounds to dollars, multiply the number of pounds by 73, and divide the quotient by 15. The result will be the equivalent in dollars and cents, assuming the rate of exchange being at \$4.8665.

Example: Reduce £6 to dollars and cents.
£6×73÷15=\$29.20.

To reduce dollars to pounds, multiply the dollars by

15 and divide the product by 73.

Example: Reduce \$17 to pounds.

\$17 \times 15 \div 73 = £3.493.

#### **GERMAN MARKS**

MARKS (GERMAN EMPIRE) AT \$0.238, CON-VERTED INTO U. S. CURRENCY

Marks	\$	Marks	\$	Marks	\$	Marks	\$
1	.238	35	8.330	69	16.422	400 500	95.20 119.00
2	.476	36 37	8.568 8.806	70 71	16.660 16.898	600	142.80
2 3 4 5 6 7	.714 .952	38	9.044	72	17.136	700	166.60
4	1.190	39	9.282	73	17.374	800	190.40
6	1.428	40	9.520	74	17.612	900	214.20
7	1.666	41	9.758	75	17.850	1,000	238.00
8	1.904	42	9.996	76	18.088	1,500	357.00
ğ	2.142	43	10.234	77	18.326	2,000	476.00
1Ó	2.380	44	10.472	78	18.564	2,500	595.00
11	2.618	45	10.710	79	18.802	3,000	714.00
12	2.856	46	10.948	80	19.040	3,500	833.00
13	3.094	47	11.186	81	19.278	4,000	952.00
14	3.332	48	11.424	82	19.516	4,500	1,071.00
15	3.570	49	11.662	83	19.754	5,000	1,190.00
16	3,808	50	11.900	84	19.992	5,500	1,309.00
17	4.046	51	12.138	85	20.230	6,000	1,428.00
18	4.284	52	12.376	86	20.468	6,500	1,547.00
19	4.522	53	12.614	87	20.706	7,000 7,500	1,666.00 1,785.00
20	4.760	54	12.852	88	20.944	8,000	1,783.00
21	4.998	55	13.090 13.328	89 90	21 .182 21 .420	8,500	2.023.00
22 23	5.236 5.474	56 57	13.566	91	21.658	9.000	2,142.00
23 24	5.712	58	13.804	92	21.896	9.500	2.261.00
25	5.950	59	14 .042	93	22.134	10.000	2,380.00
26	6.188	60	14.280	94	22.372	20,000	4,760.00
27	6.426	61	14.518	95	22.610	30,000	7.140.00
28	6.664	62	14.756	96	22.848	40,000	9,520.00
29	6.902	63	14.994	97	23.086	50,000	11,900.00
30	7.140	64	15.232	98	23.324	60,000	14,280.00
31	7.378	65	15.470	99	23.562	70,000	16,660.00
32	7.616	66	15.708	100	23.80	80,000	19,040.00
33	7.854	67	15.946	200	47.60	90,000	21,420.00
34	8.092	68	16.184	300	71.40	100,000	23,800.00

#### **AUSTRIAN CROWNS**

AUSTRIAN CROWN AT \$0.203, CONVERTED INTO U. S. CURRENCY

Crns.	\$	Crns.	\$	Crns.	\$	Crns.	\$
1	.203	35	7.105	69	14.007	400	81.20
	.406	36	7.308	70	14.210	500	101.50
2 3 4 5 6 7	.609	37	7.511	71	14.413	600	121.80
4	.812	38	7.714	72	14.616	700	142.10
5	1.015	39	7.917	73	14.819	. 800	162.40
6	1.218	40	8.120	74	15.022	900	182.70
7	1.421	41	8.323	75	15.225	1,000	203.00
8	1.624	42	8.526	76	15.428	1,500	304.50
9	1.827	43	8.729	77	15.631	2,000	406.00
10	2.030	44	8.932	78	15.834	2,500	507.50
11	2.233	45	9.135	79	16.037	3,000	609.00
12	2.436	46	9,338	80	16,240	3,500	710.50
13	2.639	47	9.541	81	16.443	4,000	812.00
14	2.842	48	9.744	82	16.646	4,500	913.50
15	3.045	49	9.947	83	16.849	5,000	1,015.00
16	3.248	50	10.150	84	17.052	5,500	1,116.50
17	3.451	51	10.353	85	17.255	6,000	1,218.00
18	3.654	52	10.556	86	17.458	6,500	1,319.50
19	3.857	53	10.759	87	17.661	7,000	1,421.00
20	4.060	54	10.962	88	17.864	7,500	1,522.50
21	4.263	55	11.165	89	18.067	8,000	1,624.00
22	4.466	56	11.368	90	18.270	8,500	1,725.50
23	4.669	57	11.571	91	18.473	9,000	1,827.00
24	4.872	58	11.774	92	18.676	9,500	1,928.50
25	5.075	59	11.977	93	18.879	10,000	2,030.00
26	5.278	60	12.180	94	19.082	20,000	4,060.00
27	5.481	61	12.383	95	19.285	30,000	6,090.00
28	5.684	62	12.586	96	19.488	40,000	8,120.00
29	5.887	63	12.789	97	19.691	50,000	10,150.00
30	6.090	64	12.992	98	19.894	60,000	12,180.00
31	6.293	65	13.195	99	20.097	70,000	14,210.00
32	6.496	66	13.398	100	20.30	80,000	16,240.00
33	6.699	67	13.601	200	40.60	90,000	18,270.00
34	6.902	68	13.804	300	60.90	100,000	20,300.00

#### · INDIAN RUPEES

# INDIA RUPEE AT \$0.3244 1-8, CONVERTED INTO U. S. AND CANADIAN CURRENCY

12 Pis=1 Anna 16 Annas=1 Rupee

				1	
Rupee	\$	Rupee	\$	Rupee	\$
1	,3244	4.3	13.9506	85	27 .5768
1 2 3 4 5 6 7 8	.6489	44	14.2751	86	27.9013
3	.9733	45	14.5995	87	28.2257
4	1.2977	46	14.9239	88	28.5501
5	1.6222	47	15.2484	89	28.8746
6	1.9466	48	15,5728	90	29 1990
7	2.2710	49	15.8972	91	29 5234
8	2.5955	50	16.2217	92	29.8479
10	2.9199	51	16.5456	93	30.1723
11	3.2443	52	16.8705	94	30.4967
12	3.5688	53	17.1950	95	30.8212
13	3.8932 4.2176	54	17.5194	96	31.1456
14	4.5421	55	17.8438	97	31.4700 31.7945
15	4.8665	56 57	18,1683 18,4927	99	31.7945
16	5,1909	58		100	32.4433
17	5,5153	59	18.8171 19.1416	200	64,8867
18	5.8398	60	19,4660	300	97 3333
19	6.1642	61	19,7904	400	129 7733
20	6.4887	62	20.1149	500	162 2167
21	6.8131	63	20.4393	600	194 6600
22	7.1375	64	20.7637	700	227 .1033
23	7.4620	65	21.0882	800	259 5467
24	7.7864	66	21.4126	900	291 9900
25	8,1108	67	21.7379	1,000	324 4333
26	8.4353	68	22.0615	1,500	486 6500
27	8.7597	69	22.3859	2,000	648.8667
28	9.0841	70	22,7103	2,500	811.0833
29	9.4086	71	23 0348	3,000	973 .3000
30	9.7330	72	23.3592	3,500	1,135.5167
31	10.0574	73	23.6836	4,000	1,297.7333
32	10.3819	74	24.0081	4,500	1,459.9500
33	10.7063	75	24.3325	5,000	1,622.1667
34	11.0307	76	24 .6569	5,500	1,784.3838
35	11.3552	77	24.9814	6,000	1,946 .6000
36	11.6796	78	25.3058	6,500	2,108.8167
37	12.0040	79	25 .6302	7.000	2,271 .0333
38	12.3285	80	25.9547	7,500	2,433 .2500
39	12.6529	81	26 .2791	8,000	2.595 4667
40	12.9772	82	26 .6035	8,500	2,757.6833
41	13.3018	83 84	26.9280 27.2524	9,000	3.082 .1167
42	13.6262	. 84	· 21.2524	1 9,300	3,002.1107

#### **BOARD MEASURE**

To find the number of feet board measure (B. M.) in a board multiply the length in feet by the breadth in feet by

the thickness in inches.

Example: The board measure of a timber 20 ft. x 2 ft.

To convert board feet into cubic feet: Divide the board feet by 12.

To find the cubic feet in 80 ft. B. M.; Example: 80÷12=6.66 cu. ft.

To convert board feet into tons:

Divide the board feet by 12, and multiply the quotient by the weight of the timber per cubic foot, thus giving the weight in pounds. Divide the weight in pounds by 2,240 to get the tons.

Example: A schooner has 1,000,000 feet B. M. of yellow pine on hoard. What is the weight of the cargo?

1,000,000÷12=83,333 cu. ft. 83,333×38=3,166,654 lbs.

 $3.166,654 \div 2,240 = 1,415$  tons (about).

Note: Yellow pine weighs 38 pounds per cubic foot.

#### **MISCELLANEOUS WEIGHTS**

One keg nails weighs 100 lbs One barrel of flour weighs 196 lbs. One bushel of corn (shelled) weighs 200 lbs.
One bushel of corn (shelled) weighs 56 lbs. One bushel of corn (on cob) weighs 70 lbs.
One bushel of oysters weighs 80 lbs.
One bushel of clams weighs 100 lbs. One bushel of buckwheat weighs 48 lbs.
One bushel of clover seed weighs 60 lbs. One bushel of potatoes weighs 60 lbs. One bushel of rye weighs 56 lbs.
One bushel of wheat weighs 60 lbs. One gallon of molasses weighs 12 lbs.

#### THE METRIC SYSTEM OF WEIGHTS AND MEASURES HAS BEEN ADOPTED BY THE FOLLOWING COUNTRIES. VIZ.:

Adopted.—Argentina, Austria, Belgium, Brazil, Bulgaria, France, Germany, Hungary, Malta, Mexico, Montenegro, Netherlands, Norway, Portugal, Roumania, Servia, Sweden, Switzerland, Uruguay.

Partially Adopted.—Chile, Colombia, Costa Rica, Denmark, Ecuador, Egypt, Greece, Guatemala, Honduras, Italy, Japan, Nicaragua, Peru, Russia, Salvador, Siam, Spain, Turkey, United States, Venezuela.

The Metric System, and							
1 Vara (3 Pie) =	33.367 inches.						
1 Cuadra =	3.9 acres.						
1 Arroba (wine) =							
1 Quintal (100 Libra)	101.42 lb. av.						
Also as old Spanish (g. v.).							

#### CL:

	China	
1	Ts'un (10 Fan) =	1.41 inches.
1	Ch'ih (10 Ts'un) $\dots =$	14.1 inches.
1	Chang (10 Ch'ih) $\dots =$	141.0 inches.
1	Yin (10 Chang) =	117.5 inches.
5	Ch'ih =	1.0 Kung.
2	Kung =	1.0 Chang.
1	sq. Chang (1 Ching)	121.0 sq. feet.
15	Ching (1 Chuo) =	1815.9 sq. feet.
4	Chuo (1 Muo) =	7260.0 sq. feet.
100	Muo (1 Ch'ing) =	72600.0 sq. feet.
1	Ho =	2.0 pints.
1	Sheng (10 Ha) =	Circ. 20 pints.
1	Tou (10 Sheng) =	Circ. 100 pints.
1	Tael, or Liang =	1.333 oz. av.
1	Chin, or Chitty (16 Tael) =	1.333 lb. av.
1	Picul, or Tan (100 Chin) =	133,333 lb. av.
	ritish weights and measures also a	

kong and other Treaty Ports.

#### Dutch Indies—Java

1	Duim =	1.3 inches.
1	Foot =	12.36 inches.
1	Ell=	27.082 inches.
1	Djong (4 Bahn) =	7,0149 acres.
1	Sack =	61.134 lb. av.
1	Pecul (2 Sack) =	122.068 lb. av.
1	Timbang (5 Pecul) $\dots =$	610.340 lb. av.
1	Coyan (30 Pecul)	3662.042 lb. av.
1	Kan =	.328 gallon.
	Leager=	127.337 gallons.
	Tael =	.0848 lb. av.
1	Catty (16 Tael) =	1.356 lb. av.
1	Pecul (weight) =	135.631 lb. av.
1	Large Bahar = -	1831.021 lb. av.
Co	ommercial Pound =	7576 Tr. grains.

#### Ecuador

Metric since 1857, and as old Spanish (q. v.).

#### Mexico

As old Spanish (q. v.)

#### Peru

Metric, old Spanish and British, but Vara (3 Pie) = 2.780 feet; Fanega (wheat) = 135 or 140 libra; Carga = 150 libra.

#### Philippine Islands

1	Pulgada (12 Linea)	.927 inches.
	Pie =	11.025 inches.
1	Vara =	33.375 inches.
1	Gantah=	.8796 gallon.
1	Caban =	21.991 gallons.
1	Libra (16 Onzo) =	1.0144 lb. av.
1	Arroba =	25.360 lb. av.
1	Catty (16 Tael) =	1.394 lb. av.
	Pecul (100 Catty) =	139.482 lb. av.

Russia	
1 Stopa (8 Vershok) =	18 inches.
1 Arschine (16 Vershok) $\dots =$	28 inches.
1 Saschen (3 Arschine) =	7 feet.
1 Verst (500 Saschen) =	1166.66 yards.
1 Desatine = 1 Vedro (100 Tscharkey) =	1.5000 ½ sqyards
1 Vedro (100 Tscharkey) = 1 Anker =	2.704 gallons. 8.114 gallons.
1 Chetvert =	46.2 gallons.
1 Sarokowaja =	108.196 gallons. 2.885 pecks.
1 Tschetwerk	2.885 pecks.
1 Pajak = 1 Last =	1.442 bushels. 11.540 quarters
1 Zolotnick (96 doli)	65.830 Tr. gr.
1 Funt (12 Lani) =	.9018 lb. av.
1 Pood (40 Funt) =	36.11227 lb. av.
1 Berkowitz = 1 Packen =	361.273 lb. av.
1 Packen	1083.382 lb. av.
Spain	027 :
1 Pulgada (12 Linea) = 1 Sesma (6 Pulgada) =	.927 inch. 5.564 inches.
1 Vara (6 Sesma)	2.782 feet.
1 Estado (2 Vara)	5.564 feet.
l Legua (of Castile)	4636.66 yards.
I ranegada =	1.6374 acres.
1 Cuartillo (4 Capo) = 1 Cuartilla (2 Azumbre) =	.1109 gallons .8879 gallons
1 Arroba Mayor (or Cantara) =	3.5571 gallons
1 Mayor (16 Cantara)	56.276 gallons.
1 Medio (2 Quintillo) =	.0621 bushel.
1 Almude (2 Medio) = 1 Fanega =	.1256 bushel.
1 Cahiz	1.5076 bushel, 18.0919 bushel,
1 Tomin (12 Grano)=	.02113 oz. av.
1 Onza =	.0634 lb. av.
	1 01 / 11
1 Libra (of Castile)	1.014 lb. av.
1 Quintal =	101.442 lb. av.
1 Ouintal = 1 Tonelada =	101.442 lb. av. 1014.42 lb. av.
1 Ouintal = 1 Tonelada = United States	101.442 lb. av. 1014.42 lb. av.
1 Ouintal = 1 Tonelada = United States  The Metric System, authorized 18	101.442 lb. av. 1014.42 lb. av.
Ouintal = 1 Tonelada = = = = United States  The Metric System, authorized 18 length and surface measures as in 1 Winchester measure.	101.442 lb. av. 1014.42 lb. av.
Ouintal = 1 Tonelada = = = = = = = = = = = = = = = = = =	101,442 lb. av. 1014,42 lb. av. 66; also weight, England, and old
Ouintal = 1 Tonelada = 2 United States  United States  The Metric System, authorized 18 length and surface measures as in 1 Winchester measure.  1 Pint (dry) = 2 Gallon (dry) = 3	101,442 lb. av. 1014,42 lb. av. 66; also weight, England, and old .9691 pint. .9604 gallon.
Ouintal = 1 Tonelada = 2 United States  The Metric System, authorized 18 length and surface measures as in 1 Winchester measure.  1 Pint (dry) = 1 Gallon (dry) = 1 Bushel = 2	101.442 lb. av. 1014.42 lb. av. 66; also weight, ingland, and old .9691 pint. .9604 gallon. .9694 bushel.
Ouintal = 1 Tonelada = 1 Pint (dry) = 1 Tonelada = 1 Tone	101.442 lb. av. 1014.42 lb. av. 66; also weight, ingland, and old .9691 pint. .9604 gallon. .9694 bushel. .9694 quarter
Ouintal = 1 Tonelada = 1 Pint (dry) = 1 Tonelada = 1 Pint (dry) = 1 Tonelada = 1 Pint (wine or spirit) = 1 Tonelada = 1 To	101.442 lb. av. 1014.42 lb. av. 56; also weight, England, and old .9691 pint. .9604 gallon. .9694 puarter .8331 pint. .8331 gallon.
Ouintal = 1 Tonelada = 1 Tonela	101,442 lb. av. 1014,42 lb. av. 66; also weight, England, and old .9691 pint. .9604 gallon. .9694 bushel. .9694 quarter .8331 pint. .8331 gallon. 1,017 pints,
Ouintal = 1 Tonelada = 1 Tonela	101.442 lb. av. 1014.42 lb. av. 66; also weight, ingland, and old .9691 pint. .9604 gallon. .9694 bushel. .9694 quarter .8331 pint. .8331 gallon. 1.017 pints.
Ouintal = 1 Tonelada = 1 Tonela	101,442 lb. av. 1014,42 lb. av. 66; also weight, England, and old .9691 pint. .9604 gallon. .9694 bushel. .9694 quarter .8331 pint. .8331 gallon. 1.017 pints. 100 lb. av.
Ouintal	101.442 lb. av. 1014.42 lb. av. 66; also weight, ingland, and old .9691 pint. .9604 gallon. .9694 bushel. .9694 quarter .8331 pint. .8331 gallon. 1.017 pints.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 106; also weight, ingland, and old .9691 pint9604 gallon9694 quarter .8331 pint8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 200 lb. av.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 106; also weight, 10gland, and old 1.9691 pint. 1.9694 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 200 lb. av. 1193 inch.
Ouintal	101,442 lb. av. 1014,42 lb. av. 1014,42 lb. av. 1014,42 lb. av. 106; also weight, 106; also weight, 107 pint. 108,9694 gallon. 109694 bushel. 109694 duarter 109694 pint. 109694 bushel. 109694 pint. 109694 bushel. 109
Ouintal	101.442 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 106; also weight, 10gland, and old 106. 106. 107. 108. 108. 109. 108. 109. 109. 109. 109. 109. 109. 109. 109
Ouintal	101.442 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 106; also weight, 101gland, and old 1.9691 pint. 1.9604 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 196 lb. av. 200 lb. av. 1193 inche. 1.1931 inches. 11.931 inches. 15.965 feet. 3.314 yards.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 106; also weight, 10gland, and old 1.9691 pint. 1.9604 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 100 lb. av. 1193 inch. 1.1931 inches. 11.931 inches. 15.965 feet. 3.314 yards. 119.305 yards.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1015. 1016. 1016. 1017. 1017. 1018. 1019
Ouintal	101.442 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 1014.42 lb. av. 106; also weight, 10gland, and old 1.9691 pint. 1.9604 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 196 lb. av. 200 lb. av. 11931 inches. 11.931 inches. 11.931 inches. 11.931 inches. 11.931 inches. 11.9305 yards. 119.305 yards. 14.913 inches. 14.913 inches. 14.913 inches. 14.913 inches. 14.913 inches.
Ouintal	101.442 lb. av. 1014.42 lb. av. 106; also weight, and old 1.069 lpint. 1.0694 gallon. 1.0694 quarter 1.0694 quarter 1.07 pints. 100 lb. av. 196 lb. av. 100 lb. av. 1193 inch. 1.1931 inches. 11.931 inches. 11.931 inches. 11.931 inches. 119.305 yards. 119.305 yards. 119.305 yards. 119.31 inches. 14.913 inches.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1015.04 gallon. 10694 gallon. 10694 quarter 1079694 quarter 10831 pint. 10831 gallon. 1096 lb. av. 1096 lb. av. 1096 lb. av. 11931 inches. 11.931 inches. 11.935 yards. 119.305 yards. 119.305 yards. 119.305 yards. 119.31 inches. 11.931 inches.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1066; also weight, 107 inch. 1.9694 pint. 1.9694 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 106 lb. av. 107 lb. av. 108 lb. av. 109 lb. av. 11931 inches. 11.931 inches. 11.935 yards. 11.931 inches.
Ouintal	101.442 lb. av. 1014.42 lb. av. 106; also weight, and old 1.0691 pint. 1.9604 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 196 lb. av. 200 lb. av. 11931 inches. 11.931 inches. 11.935 yards. 11.931 inches. 11.931 inches. 11.931 inches. 11.933 inches. 11.933 inches. 11.933 inches. 11.933 inches. 11.933 inches. 11.931 inches.
Ouintal	101.442 lb. av. 1014.42 lb. av. 106; also weight, and old 1.9691 pint. 1.9604 gallon. 1.9694 quarter 1.8331 pint. 1.8331 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 196 lb. av. 200 lb. av. 11931 inches. 11.931 inches. 11.932 inches. 11.933 inches. 11.933 inches. 11.933 inches. 11.931 inches.
Ouintal	101.442 lb. av. 1014.42 lb. av. 1015.00 lb. av. 1016 lb. av. 1017 pints. 100 lb. av. 1018 lb. av. 1019 l
Ouintal	101.442 lb. av. 1014.42 lb. av. 1066; also weight, ingland, and old
Ouintal	101.442 lb. av. 1014.42 lb. av. 106; also weight, and old 1.9691 pint. 1.9604 gallon. 1.9694 quarter 1.9694 quarter 1.9694 quarter 1.931 pint. 1.931 gallon. 1.017 pints. 100 lb. av. 196 lb. av. 196 lb. av. 200 lb. av. 1.1931 inches. 11.931 in
Ouintal	101.442 lb. av. 1014.42 lb. av. 1066; also weight, ingland, and old

Rin (10 Mo) .....=

#### METRIC WEIGHTS AND MEASURES WITH THEIR AMERICAN EQUIVALENTS

Measures of Length	
10 millimetres (mm.) = 1 centimetre (cm.) = 10 centimetres = 1 decimetre (dm.) = 10 decimetres = 1 METRE (m.) = 10 metres = 1 dekametre (dm.) =	0.328084 ft. 1.093614 ys. 1.9884 pls.
10 dekametres= 1 hectometre(hm. = 10 hectometres= 1 kilometre (km.)=	
Measures of Weight	
$10 \text{ milligrams } (m\sigma) = 1 \text{ centioram } (c\sigma) = 1$	0.1543 grn.

10 milligrams (mg.) $= 1 ce$	ntigram (cg.) = 0.1543 grn.
$10 \text{ centigrams} \dots = 1 \text{ de}$	ecigram $(dg.) = 1.5432$ grn.
$10 \text{ decigrams} \dots = 1 \text{ gr}$	ammes (grm.) = 15.4323 grn.
$10 \text{ grammes } \dots = 1 \text{ det}$	kagram (dag.) = $5.6438$ grn.
$10 \text{ dekagrams} \dots = 1 \text{ he}$	ctogram (dg.) = 3.5274  oz.
	ILOGRI, $\dot{M}gh = 2.204622$ lb.
	yriagram = 1.5747 stes.
	$g(q_1) = 1.9684$ cwt.
	nne $(t_1) \dots = 0.9842$ ton.

#### Measures of Capacity

10 millilitres (mi.)=	1 centilitre (cl.). =	0.0704	gill.
10 centilitres=	1 decilitre (dl.)=	0.1759	pint.
10 decilitres=	$1 \text{ LITRE (lit.)} \dots =$	0.8799	qt.
10 litres	1 dekalitre (dal.) =	2.1997	gall.
10 dekalitres=	1 hectolitre (hl.) =	2.7497	Бu.

#### Measures of Land

100 square	metres=	1 are	(a.)	=	0.0988	rood
100 ares	= '	I hect:	are (ha.).	=	2.4711	acres

#### **COMPUTATION OF CARGO SPACE NEEDED** FOR BARRELS

The United States Bureau of Standards has worked out, for the use of shippers, the following formula for computing the hold space required for a shipment of barrels, when the internal contents in cubic feet are known:

the internal contents in
$$V = \frac{2.81}{1} \times V \times N$$

$$2 - \frac{1}{L} - \frac{1}{W}$$

where V = total hold space required. v = internal contents in cubic feet.

1 gallon = 0.134 cubic feet.

L = number of barrels in length of bottom laver.

w = number of barrels in width of bottom layer.

N = number of barrels in shipment.

- varies with the shape and size The coefficient -

$$2-\frac{1}{L}-\frac{1}{w}$$

 $2 - \frac{1}{L} - \frac{1}{w}$ of the hold. For existing commercial conditions the range of variation of the coefficient is in all the second conditions. range of variation of the coefficient is in all probability between 1.5 and 1.8.

Assume a shipment of 134 fifty-gallon barrels, the bottom laver 10 barrels long and 4 barrels wide; then L=10: W=4, v=50×0.134 cubic feet.

— 6.7 cubic feet.

N=134 barrels.

Substituting in the formula 2.81

0.5797 Tr. grain.

V = - $--- \times 6.7 \times 134$ 

 $2-\frac{1}{10}-\frac{1}{4}$ 

 $=1.7\times6.7\times134.$ =1,526 cubic feet of hold space required.

		• • •
JAPANESE WEIGHTS AND MEASURES AND	Bushel of buckwheat, free Bushel of corn (Indian), f	
ENGLISH EQUIVALENTS	Bushel of corn (meal), fr	ee of duty.
Lineal 1 shaku-10 sun	Bushel of corn (maize), from Bushel of malt (barley), 2	ee of duty.
1 ken-6 shaku 5.965 feet	Bushel of onions, 20c duty	
1 cho-60 ken	Bushel of oats, 6c duty pe	r bu. of 32 lbs.
1 Ri-36 cho 2.4403 miles	Bushel of potatoes, free co	
1 shaku (for cloth)	Bushel of rye, free of duty Bushel of wheat, free cond	
1 Squ. shaku	Bushel of seeds, flaxseed,	linseed and other oil seeds
1 Tsubo-(36 sq. shaku)	n. s. p. f., 20c duty per bu. o Imperial bushel equals 1.03	
1 Cho. (10 tan-100 se)	imperiar busiler equals 1.00	152 busiles C. S. standard
1 Sq. Ri 5.955 miles		
Capacity 1 Sho-10 go-100 shaku 1.588 quarts		ERENT MATERIALS
1 Koku-10 to-100 sho	Cubic Feet Per Ton of Diffe of Materials P	
Weight		ollowing table one ton (2,240
1 Kin (or Catty)-160 momme	pounds) of pig iron occupi	
1 Kwamme-1,000 or 6½ kin 8.267 lbs.	Cu. ft.	Miscellaneous-Continued
	per ton of	Weight in
WEIGHTS AND MEASURES	Material 2,240 lbs. Coal (average) 40	lbs. per Material- cu. ft.
Cloth Measure	Coal, anthracite39-42	Concrete 130
21/4 inches	Coal, bituminous42-45	Coke 35
4 nails1 quarter	Oil (average)34-35 Pig Iron 9	Coal, soft 55 Coal, hard 60
Mariners' Measure 6 feet1 fathom 5,280 feet1 stat. mile	Alkali cakes 47	Emery 250
120 fathoms1 cable length 6,085 feet1 nautical mile	Wheat	Glass 165
71/3 cable lengths1 mile	Flour	Granite
Cubic Measure	Wool, undumped 235	Limestone 180
1,728 cubic inches.1 cu, ft. 128 cu, feet1 cord (wood)	Wool, washed, un- dumped 84	Oil (about) 68 Marble 170
27 cubic feet1 cubic yard 40 cubic feet.1 ton (shpg.) 2,150.42 cubic inches	Beef, frozen and	Sand 110
268.8 cubic inches	hung 120	Sandstone 145
231 cubic inches	Bacon cases 64 Maize 46	Stone
Avoirdupois Weight	Barley 58	Tile 115
27 11-32 grains1 dram 4 quarters1 cwt.	Oats 72	Salt water 64
16 drams1 ounce 2,000 lbs1 short ton 16 ounces1 pound 2,240 lbs1 long ton	Rice in bags 50 Tea 100	Fresh water 62.5 Ice 56
25 pounds1 quarter	Raw sugar in bas-	
Circular Measure	kets 50 American cotton 120	<b>Woods</b> Apple 47
60 seconds 1 minute 30 degrees 1 sign	Indian cotton, ma-	Ash 45
60 minutes1 degree 90 degrees1 quadrant 4 quadrants 12 signs or 360 degrees1 circle	chine pressed 60	Bamboo 22
Long Measure	Potatoes 50 Beans and peas43-53	Beech 48 Birch 41
12 inches	Beef, with insula-	Box 70
3 feet	tion 150	Cedar 39
Liquid Measure	Weights of Materials	Cherry
4 gills pint 31½ gallons1 barrel	Weight in	Cork 15
2 pints1 quart 2 barrels1 hogshead 4 quarts1 gallon	lbs. per Material- cu. ft.	Cypress
Surveyors' Measure	Material cu. ft. Wrought iron 480	Dogwood 47 Ebony 76
7.92 inches	Cast iron 451	Elm 38
25 links	Wrought steel 490 Cast steel 490	Fir
640 acres	Nickel steel 491	Hemlock 24
36 square miles (6 miles square)1 township	Brass 520	Hickory 48
Troy Weight	Manganese bronze. 535 Copper 550	Holly
24 grains	Aluminum 160	Lignum vitae 62
Apothecaries' Weight	Lead 710	Linden 37
20 grains1 scruple 8 drams1 ounce	Gold (pure) 1,200 Magnesium 109	Locust
3 scruples1 dram 12 ounces1 pound	Mercury 846	Maple 42
The ounce and pound in this are the same as in Troy Weight.	Nickel 548 Platinum 1,347	Oak, live 69
	Silver 655	Oak, white
<b>WEIGHTS OF BUSHELS</b>	Tin 458	Spruce 28
The following weights are accepted on entries of grain	Zinc	Sycamore 37 Teak 51
in the United States Custom House:	Brick, common 113	Pine, white 35
Bushel of barley, 15c duty per bu. of 48 lbs.	Cement 78	Pine, yellow 38
Bushel of beans (edible), 25c duty per bu. of 60 lbs. Bushel of beans (castor), 15c duty per bu. of 50 lbs.	Clay	Walnut 36 Willow 34
	- C	**************************************

#### SPECIFIC GRAVITY OF DIFFERENT SUBSTANCES

Compared with Water						
		Metals				
Water 100	) Cork	24 Zinc 719				
Sea Water 103						
Alcohol 84						
Olive Oil 92	? Cedar	61 Bar iron 779				
Turpentine . 99	Pear	66 Steel 783				
Petroleum 87	Walnut	67 Copper 869				
Wine 100	Cherry	72 Brass 840				
Cider 102	Maple	75 Silver1051				
Beer 102	Apple	79 Lead1135				
Porter 104	l Ash	84 Mercury 1357				
Gravel, Sand 265	Beech	85 Gold1926				
Granite 272	Mahogany	106 Platinum1950				
	Oak	117 }				
	Ebony	133 \				

### A gallon of wine or water weighs 10 pounds.

#### TABLE SHOWING THE PRESSURE POUNDS PER SOUARE INCH. AT THE FOLLOWING DEPTHS OF WATER

Depth of	Pressure	Depth of	Pressure
Water	per sq. in.	Water	per sq. in.
Feet	Pounds	Feet	Pounds
10	4	110	47
20	8	120	52
30	13	130	56
40	17	140	60
50	21	150	65
60	26	160	69
70	30	170	73
80	34	180	78
90	39	190	84
100	43	200	86

#### DRY MEASURE

The United States struck bushel contains 2,150.42 cubic inches or 1.244 cubic feet. By law its dimensions are those of a cylinder 18½ inches in diameter and 8 inches deep. The heaped bushel is equal to 134 struck bushels, the cone being 6 inches high.

A bushel may be taken approximately as 11/4 cubic feet,

or 1 cubic foot may be considered 4/5 of a bushel.

The British bushel contains 2,218.19 cubic inches, or 1.2837 cubic feet, or 1.032 U. S. bushels.

#### POPULATIONS OF VARIOUS COUNTRIES

(All) Papua	. 1,000,000
Java	35,000,000
Sumatra	
<u> </u>	
Borneo	2,500,000
Celebes	1,500,000
Straits Settlements	
F. M. S	. 2,000,000
Philippines	8.000.000
Rongkong	
Cochin China	3,100,000
Siam	4,500,000
Burma	. 12,250,000
Ceylon	4.250.000
India	. 300,000,000

#### TABLE FOR CONVERSION OF POUNDS **AVOIRDUPOIS INTO KILOGRAMS**

To find the weight in kilos of a shipment of merchandise weighing say, 10,471 lbs., find the number of pounds in the column marked "lbs." The equivalent number of kilos is in the following column—thus:
Lbs. 10,000 = Kilos 4536,00

400 = Kilos 181.44 Lbs. 71 = KilosLbs. 32,206 Lbs. 10,471 = Kilos 4749,646 To find the weight in kilos of Lbs. 100,000, take the kilo equivalent of Lbs. 10,000 i. e., Kilos 4536,00, and move the decimal point one figure to the right, thus: Lbs. 100,000. = Kilos 45,360.00.

Lbs.	100,000.	=	Kilos 45,36	0.00.	
Lbs.			Kilos	Lbs.	Kilos
1		_	0.4536	<b>6</b> 9	= 31.298
2	) ' • • • • • • • •	. =	0.9072	70	= 31.752
3		=	1.3608	71	= 32.206
4		=	1.8144	72	= 32.659
5		=	2.2680	73	= 33.113
6		=	2.7216	74	= 33.566
7		=	3.1752	75	= 34.020
8		. =	3.6288	<u>76</u>	= 34.474
10	· • • • • • • •	=	4.0824	77	= 34.927
	٠		4.5360	78	= 35.381
11		=	4.990	79	= 35.834
12		=	5.443 5.897	80	= 36.288 = 36.742
13		=	6.350	81	
15	• • • • • • • •	=	6.804	82 83	= 37.195 $=$ 37.649
16		=	7.258	84	= 38.102
17	• • • • • • • •	=	7.711	85	= 38.556
18	3	=	8.165	86	= 39.010
19		_	8.618	87	= 39.463
20	) <b>.</b>	. =	9.072	88	= 39.917
21		. =	9,526	89	= 40.370
22	· · · · · · · · ·	_	9.979	90	= 40.824
23		=	10,433	91	= 41.278
24		_	10.886	92	= 41.731
25		. =	11.340	93	= 42.185
26		. =	11.794	94	= 42.638
27	. <b></b>	. =	12.247	95	= 43.092
28		=	12.701	96	= 43.546
29		=	13.154	97	= 43.999
<b>3</b> ∪	)	=	13.608	98	= 44.453 = 44.906
37	· · · · · · · · ·	=	14.062 14.515	99	14,4
32		=	14.969	100 200	
34		=	15.422	300	= 90.72 = 136.08
35		=	15.876	400	= 181.44
36		=	16.330	500	= 226.80
37	••••••	=	16.783	600	= 272.16
38	3	$\equiv$	17.237	700	= 317.52
39		=	17.690	800	= 362.88
40	) <b></b>	. =	18,144	900	= 408.24
41		=	18.598	1000	= 453.60
42	, , , , , , , ,	=	19.051	2000	= 907.20
43		=	19.505	3000	= 1360.80
44	·	_	19.958	4000	= 1814.40
45	·	=	20.412	5000	= 2268.00
46		=	20.886	6000	= 2721.60
4/		=	21.319	7000	= 3175.20 = 3628.80
40		=	21.773	8000	
49 50		=	22,226	9000 10000	= 4082.40 = 4536.00
51		=	22.680 23.134	11000	= 4990.00
52		=	23.587	12000	= 5443.00
53	••••••	=	24.041	13000	= 5897.00
54	• • • • • • • •	=	24,494		= 6350.00
55	••••••	=	24.948		= 6804.00
56		=	25,402		= 7258.00
57		=	25.855		= 7711.00
58		=	26.309		= 8165.00
59		=	26,762		= 8618.00
60		=	27.216		= 9072.00
61		=	27.670	25000	=11340.00
62		=	28,123		=13608.00
63		=	28.577		=18144.00
64		=	29.030		=22680.00
05			29.484		=27216.00
00	• • • • • • • •	=	29.938		=31752.00
0/ 69	· · · · · ·	=	30.391		=36288.00 =40824.00
08	• • • • • • • •	=	30.845	<del>2000</del>	

#### **MISCELLANEOUS MEASURES**

4 i	nches	hand	18 inches	cubit
		Span	272 lect unitary	pace

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# JAPANESE WEIGHTS, MEASURES AND MONEYS, WITH AMERICAN, ENGLISH, FRENCH AND GERMAN EQUIVALENTS

Japan	United States of America	Great Britain	France	Germany
Ri	2.44029 Miles	2.44030 Miles	3.92727 Kilometres	3.92727 Kilometer
Ri (marine)	1.15151 Miles	1.15152 Miles	1.85318 Kilometres	1.85318 Kilometer
Square Ri	5.95501 Square Miles	5.95505 Square Miles	15.42347 Kilometres Carres	15.42347 Quadrat- kilometer
Cho = 10 Tan = 3,000 Tsubo	2.45062 Acres	2.45064 Acres	99.17355 Ares	99.17355 Ar
Tsubo	3.95367 Square Yards	3.95369 Square Yards	3.30579 Centiares	3.30579 Quadratmeter
Koku = 10 To = 100 Sho	47.65389 Gallons (Liquid) 5.11902 Bushels (Dry)	4.96005 Bushels	1.80391 Hectolitres	1.80391 Hektoliter
Koku = (Capacity of vessels)	1/10 of one Ton	1/10 of one Ton	1/10 de Tonne	1/10 Tonne
Kwan = 1,000 Momme	8.26733 lbs. (Avoir.) 10.04711 lbs. (Troy)	8.26733 lbs. (Avoir.) 10.04711 lbs. (Troy)	3.75000 Kilogrammes	3.75000 Kilogramm
Kin = 160 Momme	1.32277 lbs. (Avoir.) 1.60754 lbs. (Troy)	1.32277 lbs. (Avoir.) 1.60754 lbs (Troy)	0.60000 Kilogramme	0.60000 Kilogramm
Momme	0.13228 Ounce (Avoir.) 0.12057 Ounce (Troy)	2.11644 Drams. 2.41131 Dwts.	3.75000 Grammes	3 75000 Gramm
Yen = 100 Sen	0.4984 Dollar	2s. 0d. 582	2.583 Francs	2.0924 Mark

### LITRES CONVERTED INTO WINE GALLONS

#### **AVOIRDUPOIS WEIGHT**

Litres	Gallons	Litres	Gallons	Litres	Gallons	Qrs.	Lbe.	Tons	Lha.	Tons	Libe.	Tons	Lie.
1	.264175	41	10,831175	80	21.134000	1	28	17	38.080	57	127,680	96	215,040
2	.528350	42	11.095350	81	21.398175	2	28 56	18	40,320	58	129,920	97	217,280
3	.792525	43	11.359525	82	21.662350	3	84	19	42,560	59	132,160	98	219,520
4	1.056700	44	11.623700	83	21.926525	Cwts.		20	44,800	60	134,400	99	221,760
5	1.320875	45	11.887875	84	22.190700	1	112	21	47,040	61	136,640	100	224,000
6	1.585050	46	12.152050	85	22.454875	2	224	22	49,280	62	138,880	150	336,000
7	1.849225	47	12.416225	∥ 86	22,719050	3	336	23	51,520	63	141,120	220	448,000
8	2.113400	48	12,680400	87	22.983225	4	448	24	53,760	64		250	560,000
9	2.377575	49	12.944575	88	23.247400	5	560	25	56,000	65		300	672,000
10	2.642750	50	13.208750	89	23.511575	6	672	26	58,240	66		350	784,000
11	2.905925	51	13.472925	90	23.775750	7	784	27	60,480	67	150,080	400	896,000
12	3.170100	52	13.737100	91	24.039925	8	896	28	62,720	68	152,320	450	1,008,000
13	3.434275	53	14.001275	92	24.304100	9	1,008	29	64,960	69	154,560	500	1,120,000
14	3.698450	54	14.265450	93	24.568275	10	1,120	30	67,200	70		550	1,232,000
15	3.962625	55	14.529625	94	24.832450	11	1,232	31	69,440	71		600	1,344,000
16	4.226860	56	14.793800	95	25.096625	12	1,344	32	71,680	72	161,280	650	1,456,000
17	4.490975	57	15.057975	96	25.360800	13	1,456	33	73,920	73		700	1,558,000
18	4.755150	58	15.322150	97	25.624975	14	1,568	24	76,160	74	165,760	750	1,680,000
19	5.019325	59	15.586325	98	25.889150	15	1,680	35	78,400	75		800	1,792,000
20	5.283500	60	15.850500	99	26.153325	16	1,792	36	80,640	76	170,240	850	1,904,000
21	5.547675	61	16.114675	100	26.4175	17	1,904	37	82,880	77	172,480	900	2,016,000
22	5.811850	62	16.378850	200	52.8350	18	2,016	38	85,120	78		950	2,128,000
23 24	6.076025	63	16.643025	300	79.2525	19	2,128	39	87,360		176,960	1,000	2,240,000
24	6.340200	64	16.907200	400	105.6700	Tons		40	89,600	80		1,100	2,464,000
25 26 27	6.604375	65	17.171375	500	132.0875	Ĭ	2,240	41	91,840	81	181,440	1,200	2,688,000
20	6.868550	66	17.435550	600	158.5050	2	4,480	42	94,080		183,680	1,300	2,912,000
2/	7.132725	67	17.699725	700	184.9225	3	6,720	43	96,320	83	185,920	1,400	3,136,000
28	7.396900	68	17.963900	800	211.3400	4	8,960	44	98,560	84	188,160	1,500	3,360,000
29	7.661075	69	18.228075	900	237.7575	5	11,200	45	100,800	85	190,400	1,600	3,584,000
30	7.925250	70	18.492250	1,000 2,000	264.175	6	13,440	46	103,040	86	192,640	1,700	3,808,000
31	8.189425	71	18.756425	3,000	528.350	7	15,680	47	105,280	87	194,880	1,800	4,032,000
32	8.453600	72	19.020600		792.525 1.056.700	8	17,920		107,520 109,760	88	197,120	1,900	4,256,000
33	8.717775	73	19.284775	4,000		9	20,160			90	199,360		4,480,000
34   35	8.981950	74 75	19.548950	5,000 6.000	1,320.875 1,585.050	10 11	22,400 24,640		112,000   114,240	91	201,600 203,840	2,500 3,000	5,600,000 6,720,000
35 36	9.246125	76	19.813125 20.077300	7.000	1.849.225	12	26,880		116,480	92	206,080	3,500	7.840,000
37	9.510300	77	20.077300	8,000	2,113,400	13	29,120		118,720	93	208,320	4,000	8.960.000
38	9.774475 10.038650	78	20.541475	9.000	2,377.575	14	31,360		120,960	74	210,560	4,500	10,080,000
39	10.038030	79	20.869825	10,000	2,641. <b>75</b> 0	15	33,600		123,200	95	212,800	5,000	11,200,000
40	10.520825	/> /	20.009023	10,000	2,071,730	16	35,840		125,440		212,000	3,000	11,200,000
40	10.20/000	1 1		i		10	33.040	1 20	123,440 (			1	

### Russian Poods Reduced to Avoirdupois Pounds

40 Russian Pounds = 1 Pood							
R. Lbs.	U.S. Lbs.	P.	U.S. Lbs.	P.	U. S. Lbs.	P.	U. S. Lbs.
1	.903	38	34.307	36	1,300.068	73	2,636,249
2	1.806	39	35.210	37	1,336.181	74	2,672.362
3	2.708		36.113	38	1,372.294	75	2,708.475
4	3.611	2	72,226	39	1,408.407	76	2,744.588
5	4.514	3	108.339	40	1,444.520	77	2,780.701
2 3 4 5 6 7	5.417	4	144.452	41	1,480.633	78	2,816.814
7	6.320	5	180.565	42	1,516.746	79	2,852.927
8 9	7.223	6	216.678	43	1,552.859	80	2,889.040
.9	8.125	7	252.791	44	1.588.972	81	2,925.153
10	9.028	8	288.904	45	1,625.085	82	2,961.266
11	9.931	9	325.017	46	1,661.198	83	2,997.379
12	10.834	10	361.130	47	1,697.311	84	3,033.492
13	11.737	11	397.243	48	1,733.424	85	3,069.605
14	12,640 13,542	12	433.356	49 50	1,769.537	86 87	3,105.718 3,141.831
15 16	14.445	13	469.469   505.582	51	1,805.650	88	3,177.944
17	15.348	15	541.695	52	1,841.763	89	3,214.057
18	16.251	16	577.808	53	1,877.876 1,913.989	90	3,250.170
19	17.154	17	613.921	54	1.950.102	91	3,286,283
20	18.057	18	650.034	55	1,986,215	92	3,322.396
21	18.959	19	686,147	56	2.022.328	93	3,358,509
22	19.862	20	722,260	57	2.058.441	94	3.394.622
23	20.765	21	758.373	58	2,094,554	95	3,430,735
24	21.668	22	794,486	59	2,130.667	96	3.466.848
25	22.571	23	830,599	60	2,166,780	97	3,502.961
26	23.473	24	866,712	61	2,202.893	98	3,539.074
27	24.376	25	902.825	62	2.239.006	99	3.575.187
28	25.279	26	938.938	63	2,275.119	100	3,611.300
29	26.182	27	975.051	64	2.311.232	200	7,222,600
30	27.085	28	1,011.164	65	2,347.345	300	10,833.900
31	27.988	29	1,047.277	66	2,383.458	400	14,445.200
32	28.890	30	1,083.390	67	2,419.571	500	18,056.500
33	29.973	31	1,119.503	68	2.455.684	600	21,667.800
34	30.696	32	1.155.616	69	2,491.797	700	25,279,100
35	31.599	33	1,191.729	70	2.527.910	800	28,890.400
36	32.502	34	1,227.842	71	2,564.023	900	32,501.700
37	33.405	35	1.263.955	72	2.600.136	1,000	36,113.000

#### Chinese Piculs Reduced to Avoirdupois Pounds

1 Picul = 1331/3 Pounds Avoirdupois

1 Ficul = 135/3 Founds Avoirdupois							
Pls.	Lbs.	Pls.	Lhs.	Pls.	Lbs.	Pls.	Lbs.
1	133.33	33	4,400.00	65	8,666.67	97	12,933,33
2 3	266.67	34	4,533.33	66	8,800.00	98	13,066.67
3	400.00	35	4,666.67	67	8,933.33	99	13,200.00
4	533.33	36	4,800.00	68	9,066.67	100	13,333.33
5	666.67	37	4,933.33	69	9,200.00	200	26,666,67
6 7	800.00	38	5,066.67	70	9,333.33	300	40,000.00
7	933.33	39	5,200.00	71	9,466.67	400	53,333.33
8	1,066.67	40	5,333.33	72	9,600.00	500	66,666.67
9	] 1,200.00	41	5,466.67	73	9.733.33	600	80,000.00
10	1,333.33	42	5,600.00	74	9,866.67	700	93,333.33
11	1,466.67	43	5,733.33	75	10,000.00	800	106,666.67
12	1,600.00	44	5,866.67	76	10,133.33	900	120,000.00
13	1.733.33	45	6,000.00	77	10,266.67	1,000	133,333.33
14	1.866.67	46	6,133.33	78	10,400.00	1,500	200,000.00
15	2,000.00	47	6,266.67	79	10,533.33	2,000	266,666.67
16 17	2,133.33	48	6,400.00	80	10,666.67	2,500	333,333.33
17	2,266.67	49	6,533.33	81	10,800.00	3,000	400,000.00
18	2,400.00	50	6,666.67	82	10,933.33	3,500	466,666.67
19	2,533.33	51	6,800.00	83	11,066.67	4,000	533,333.33
20	2.666.67	52	6,933.33	84	11.200.00	4.500	600,000.00
21	2,800.00	53	7,066.67	85	11,333.33	5,000	666,666.67
22	2,933.33	54	7,200.00	86	11,466.67	5,500	733,333.33
23	3,066.67	55	7,333.33	87	11,600.00	6,000	800,000.00
24	3,200.00	56	7,466.67	88	11,733.33	6,500	866,666.67
25	3,333.33	57	7,600.00	89	11,866.67	7,000	933,333.33
26	3,466.67	58	7,733.33	90	12,000.00	7,500	1,000,000.00
27	3.600,00	59	7,866.67	91	12,133.33	8,000	1,066,666,67
28	3,733.33	60	8,000.00	92	12,266.67	8,500	1,133,333.33
29	3,966.67	61	8.133.33	93	12,400.00	9,000	1,200,000,00
30	4,000.00	62	8,266.67	94	12,533.33	9,500	1,266,666.67
31	4,133.33	63	8,400.00	95	12,666.67		1,333,333.33
32	4.266.67	61	8.533.33	06	12.800.00		

#### Japanese Mommes Converted Into Avoirdupois **Pounds**

1 Momme = 3.750 Grammes (T. D. 18590)

М.	Pounds	M.	Pounds	M.	Pounds	м.	Pounds
1	.00826725	26	.21494850	51	.42162975	76	.62831100
2	.01653450	27	.22321575	52	.42989700	77	.63657825
3	.02480175	28	.23148300	53	.43816425	78	.64484550
4	.03306900	29	.23975025	54	.44643150	79	.65311275
5	.04133625	30	.24801750	55	.45469875	80	.66138000
6	.04960350	31	.25628475	56	.46296600	81	.66964725
7	.05787075	32	.26455200	57	.47123325	82	.67791450
8	.06613800	33	.27281925	58	.47950050	83	.68618175
9	.07440525	34	.28108650	59	.48776775	84	.69444900
10	.08267250	35	.28935375	60	.49603500	85	.70271625
11	.09093975	36	.29762100	61	.50430225	86	.71098350
12	.09920700	37	.30588825	62	.51256950	87	.71925075
13	.10747425	38	.31415550	63	.52083675	88	.72751800
14	.11574150	39	.32242275	64	.52910400	89	.73578525
15	.12400875	40	.33069000	65	.53737125	90	.74405250
16	.13227600	41	.33895725	66	.54563850	91	.75231975
17	.14054325	42	.34722450	67.	.55390575	92	.76058700
18	.14881050	43	.35549175	68	.56217300	93	.76885425
19	.15707775	44	.36375900	69	.57044025	94	.77712150
20	.16534500	45	.37202625	70	.57870750	95	.78538875
21	.17361225	46	.38029350	71	.58697475	96	.79365600
22	.18187950	47	.38856075	72	59524200	97	.80192325
23	.19014675	48	.39682800	73	.60350925	98	.81019050
24	.19841400	49	.40509525	74	.61177650	99	.81845775
25	.20668125	50	.41336250	75	.62004375	100	
						:	

# **American Steel Export**



Export Specialists to the Steel Industry

#### STEEL AND METALS

Finished or Semi-finished Steel, Iron and Metal Products, Cast, Rolled, Forged or Drawn for Every Purpose

> Blooms, Billets and Slabs Angles, Beams and Channels Plates, Universal and Sheared Shipbuilding Material Axles, Rails, Portable Tracks Railroad Spikes Washers, Track Bolts Bolts, Nuts, Rivets Car-Wheels **Forgings** Bar and .Agricultural Steels **Tool Steel Sheet Steel Products** Tin Plate Pipes and Tubes Wire Rods and Wire Products

Engineering and Contracting

Northwest Sales Manager . . M. R. ROSSE 1203 Smith Building, Seattle

	DISTANCES IN	KNOTS		Panama (P) 6,460 7,225
A	approximate Distances for Fu	11-Powered	Steamers	Pangini
•		ne Town	Durban	Pemba       2,460       1,680         Penang       5,320       4,665
	Adelaide	5.600	5,160	Pernambuco 3,320 4,085
	Aden	3,950	3,1 <i>7</i> 0	Philadelphia 6,860 7,630
	Albany	5,000	4,550	Plymouth 5,850 6,630
	Algoa Bay	425	425	Pondicherry 4,790 4,010
	Amsterdam	6,200 6,160	6,970 6,930	Portland (Me.) 6,790 7,555 Port Nolloth
	Antwerp	2.450	3,220	Port Said 5,345 4,565
	Auckland	7.360	6,900	Ouebec
	Bahia	3,320	4,085	Quilimane 1,525 745
	Baltimore	6,915	7,680	Rangoon 5,480 4,740
	Batavia	5,180	4,425	Reunion
	BeiraBombay	1,435 4,600	655 <b>3,820</b>	Rio de Janeiro       3,270       3,970         Rotterdam       6,170       6,950
	Boston	6,775	6,410	Saigon 6,235 5,580
	Bremen	6,410	7,180	St. Helena 1,770 2,540
	Brisbane	6,740	6,300	St. John (N. F.) 6,205 6,980
	Buenos Aires	3,780	4,535	St. Vincent (C. V.) 3,950 4,720
	Capetown	5,480	4,740 810	San Francisco (M) 10,220 10,830 San Francisco (P) 9,740 10,500
	Callao (M)	6.680	7.290	San Francisco (P)       9,740       10,500         Santos       3,485       4,250
•	Cardiff	5,950	6,720	Seattle (M) 10,995 11,610
	Chinde	1,470	690	Seattle (P) 10,515 11,275
	Christiania	6,660	7,430	Shanghai
	Colombo	4,360	3,615	Sierra Leone
	Colon	6,410 6.585	7,175 <b>7.360</b>	Singapore       5,630       4,975         Soerabaja       5,690       5,035
•	Dares-Salaam	2,375	1,595	Southampton 5,950 6,720
	Delagoa Bay	1,085	305	Swakopmunde
	Diego Garcia	3,390	2,630	Swatow 7,145 6,490
	Diego Suarez	2,240	1,510	Sydney, N. S. W 6,280 5,840
	Dunedin Dunkirk	6,845 6,195	6,385 6,96 <b>5</b>	Tamatave       2,080       1,350         Teneriffe       4,430       5,310
	Durban	810	0,500	Townsville
	East London	545	290	Valparaiso (M) 5,450 6,060
	Fremantle	4,950	4,500	Vancouver (M) 11,020 11,630
	Galveston	7,470	7,360	Vancouver (P) 10,540 11,300
	Genoa	5,970 5.125	5,990 5,890	Vera Cruz         7,415         8,180           Walfisch Bay         740         1,585
	Gibraltar	6,170	5,890 6,940	Walfisch Bay
	Hamburg	6,425	7,200	Yohohama 8,360 7,715
	Havre	5,970	6,740	Zanzibar 2,425 1,640
	Hobart	5,700	5,250	M—Via Straits of Magellan.
	Hongkong	6,900 6,235	6,255 7.010	S—Via Suez Canal.
	HullIloilo	6,765	6.110	K—Via Kiel Canal. P—Via Panama Canal.
	Inhambane	1,230	450	
	Knysna	285	570	
	Kobe	8,430	7,775	USEFUL CONSTANTS, ETC.
	Kurrachee	4,665 2,565	3,885 3,410	1 pint of water weighs a pound and a quarter.
	Las Palmas	4,545	5,315	1 gallon of water equals 1605 c. f. equals 10 lbs. water
	Lisbon	5,150	5,920	at 62 deg. F.
	Liverpool	6,075	6,850	1 knot equals 6,080 ft., or 1.15 st. miles.
	London		6,890	1 lb. (avoirdupois) equals 7,000 grns. equal to 463.6
	Madeira		5,540 4,085	grammes.  1 lb. (Troy) equals 5,760 grains.
	Mahe Seychelle Is	2.840	2,110	1 English h. p. equals 33,000 ft. lbs. of work done per
	Majunga	1,990	1,260	minute, equals 746 watts.
	Manila	6,800	6,145	1 French h. p. or force de cheval equals 4,500 kilo-
	Marseilles		6,070 (S)	grammeters per min., equals .9863 English h. p.
	Mauritius	2,280 2,050	1,550 1,270	1 English h. p. equals 1.01385 French force de cheval. 1 Bd. Trade Elec. unit equals 1,000 watts per hour.
	Melbourne	5.815	5,375	Volts X amperes equals watts.
	Moji	8,080	7,435	The pressume of one atmosphere equals 14.7 lbs. per sq.
	Mombassa	2,545	1,765	in., equals 2,116 lbs. per sq. ft., equals a column of mer-
	Monte Video		4,420 7,880	cury 760 m/m high, A column of water 2.3 high corresponds to a pressure
	Montreal	7,110 250	605	of 1 lb, per sq. in.
	Moulmein		4,755	Cubic inches of cast iron X 0.26 equals lbs. avoirdupois.
	Mozambique	1,810	1,030	Cubic inches of wrought iron, 0.28, equals lbs. avoirdu-
	Nagasaki	7,875	7,220	pois.
	Naples (S)	6,095 6,340	5,675 5,900	Thickness of wrought iron plate in inches X 40 equals
	Newcastle, N. S. W	7,350	8,120	lbs. per sq. ft. Sectional area of wrought iron in inches X 3.34 equals
	New York	6,800	7,565	lbs, per lineal ft.
	Nossi-Be	2,140	1,360	Dia. of wrought iron in inches squared X 2.64, equals
	Panama (M)	7,960	8,575	lbs. per lineal ft.

# Directory of Exporters & Importers

### ACAPULCO, MEXICO

LINE SUCESOE, San Diego, No. 4 yt., Acapulco, Gro., Mexico. Established 1858. Telegraphic address, Link Sucesor. Principal imports, Drogas, Productos Químicos, Medicines de patente.

#### ADELAIDE, AUSTRALIA

- CROMPTON & SON, Gawler Place, Adelaide, Australia. Established 1863. Telegraphic address, Ovipelles. Codes used, A. B. C., 5th, A.-I, private, Principal imports: Soap makers' chemicals, boxtimber in shooks, ditto sundries. Principal exports: Sheepskins in wool, rabbit, fox and other fur skins, tallow, hides, glue stuffs, white bone for cutting, horns and hair.
- ELDER SMITH & CO., LTD., Currie St., Adelaide, S. Australia. Branch office at Melbourne and other Australian cities. General importers. Exporters of: Hides, skins, wool, minerals, grain and usual Australian exports.
- GAMELING & McDONALD, 50 Pirle Street. Established 1897. Telegraphic address Yucca. Codes used, A. B. C., 5th edition. Principal imports, tinned fish, groceries, drapery, motors and motor accessories, glass, hardware and specialty lines. Principal exports, Yuca gum, grain, metals, dried fruits, wine and Australian produce.
- MALCOLM REID & CO., LTD. Office 187-195 Rundle St., Adelaide, South Australia. Telegraphic address, "Furniture." Codes used A. B. C., 5th Edition. Bank references, Bank of New South Wales, Adelaide. Importers of: Furniture, drapery, hardware, floor coverings, etc.

#### AICHIKEN, JAPAN

TSAO SUZUKI & CO., No. 1 Shinkawa Toyohashi, Aichiken, Japan. Established 1917. Bank references, the Meiji Bank. Cable address, "I. Suzuki." Exporters of: Works of art, Japanese old and new pictures, picture cards, small wares, books, curios, Japanese pens (made of bamboo and hair), and Japanese groceries. Importers of works of art.

### AKRON, OHIO, U. S. A.

PIRESTONE TIRE & RUBBER CO. Head office, Akron, Ohio; branch offices in all principal cities. Established 1902. Telegraphic address, Firestone. Principal imports: Crude rubber. Principal exports: Rubber goods.

### AMOY, CHINA

TAIT & CO. Head office, British Concession, Amoy, China. Branch office, Daitetel (Taipeh) Formosa. Established 1845. Telegraphic address, Tait. Codes used, A. B. C., 5th edition, Lieber, Western Union, Watkins. Principal imports, piece goods, tin plate, kerosene oil, paints, drugs and chemicals. Principal exports, tea, sulphur, narcissus bulbs.

#### AMSTERDAM, HOLLAND

GEBROEDERS VETE. Head office address, P. H. Kade No. 123, Amsterdam. Branch office addresses, Padang, Sumatra; Macassar, Celebes. Telegraphic address, Veth. Codes used, A. B. C., 4th and 5th, Private. Principal imports: All kinds of manufactured goods, white grey's supers, fancies, yarns, prints, cottonettes, sarongs, handkerchiefs, salemporis, cambrics, etc.; iron, corrugated iron sheets, cement, wire nails, wire, etc. Principal exports: Coffee, spices, hides, rattans, cloves, etc.

- EAMDEL MAATSCEAPPLY, "DELIATJEE," Sophiaplein 2, Amsterdam, Holland. Established 1905. Cable address, "Noltehaas." Codes used, A. B. C., 5th edition. Branches, Medan, Belawan, Langsar, Penang, etc. Bank references, The Chartered Bank of India, Australia & China. Imports: Hardware, piece goods, provisions, beverages, sundries, hosiery, etc. Exports: Rubber, copra, pepper, coffee, tea, etc.
- MANDELS VEREENIGING VOORHEEN REIS CO. Head office address, Heerengracht 141, Amsterdam, Holland. Branch office addresses, Soerabaia, Java; Batavia; Semarang, Java; Macassar, Celebes; Aenpasar, Bali; Ampenan, Lombok. Established 1902. Telegraphic address, Rosmarin. Codes used, A. B. C., 5th, Lieber's, Mercuur, Private. Principal imports: Any articles, except machineries, automobiles, tires. Principal exports: Copra, mace, spice, coffee, birdskins, sandalwood, gums, hides, buffalo horns, deerhorns, cassia fistula.
- MOLLAND STRAITS TRADING CO. LTD. Head office address, 305-09 Keizersgracht, Amsterdam, Holland. Branch office addresses, 49 Beach Street, Penang; 50-52 The Arcade. Singapore, Straits Settlements; 4 Esplanado Medan, Sumatra. Established 1917. Telegraphic address, Boelen. Codes used, Broomhall Rubber Ed., A. B. C. 5th., Lieber's, Mercuur. Principal imports: Nails, axes, corrugated iron, beer, consumption articles, motor tires, typewriters, etc. Principal exports: Rubber, tapioca, copra, pepper, gums, mace, etc.
- LIBDETIVES-STORVIS, 2 J. Street, Brouwersplein Amsterdam, Holland. Branch offices, Sydney, Australia. Established 1889. Telegraphic address, "Lindetives." Principal imports: None. Principal exports: Machinery, tools, hardware, building materials, iron and steel products.
- W. L. E. TELS & CO.'S EANDELMY, Heerengracht 124128 Amsterdam, Holland. Established 1883. Cable address, "Letels." Codes used, A. B. C. 4th and 5th editions. Western Union and private codes. Branch office addresses, Batavia, Socrabala, Padang, Semarang. Bank references, Goldman, Sach & Co., New York. Crocker National Bank, San Francisco, National Provincial & Union Bank of England, Ltd., London. Imports: Copra. coffee, oils, tapicca and other special East Indian products. Exports: All kinds of iron and steel, hardware, caustic soda, alkali and other chemicals, palmoil, glass, porcelain and hardware, canned provisions and beverages. crockery, printing and writing paper, metals, dry and oil paints, wire nails, etc. All kinds of piece goods suitable to the Dutch East Indian market.
- TRADING COMPANY "MOLLAND." Head office address, 259 Keizersgracht. Amsterdam. Branch office address, 39 Akashi-Machi, Kobe, Japan. Established 1903. Telegraphic address, "Holsing." Codes used, A. B. C., 5th and Private. Principal imports: Piece goods, sundries of all descriptions. Principal exports: Rubber.

### ASTORIA, ORE, U.S.A.

ASTORIA MARINE IRON WOLKS, Astoria, Oregon. Established 1903. Telegraphic address, Astoria, Oregon. Codes used, Western Union. Principal imports: None. Principal exports: Marine, saw mill and logging machinery. Bank references: Scandinavian-American Bank, Astoria, Oregon.

### **AUCKLAND, NEW ZEALAND**

- ARCHIBALD CLARK & SONS, LTD., Elliott Street. Established 1850. Telegraphic address, Clarkim. Codes used, A. B. C., 5th edition. Lieber's, private. Principal imports, wholesale drapery lines.
- PATERSON & ROBERTSON, Commerce Street. Established 1900. Telegraphic address, Lambrequin. Codes used, A. B. C., 5th and Bentley's. Principal imports, manufactures of any kind, paints and builders' requirements, agricultural machinery, tires and automobile sundries. Principal exports, produce, hemp, timber.
- SPEDDING, LTD., Commerce Street. Established 1898.
  Telegraphic address, Spedagent. Codes used, A. B. C.,
  4th and 5th and improved, Western Union, Western
  Union improved, Scott's 10th edition, Bentley's Hendall's 12 figure code, Tybo and private. Principal imports: Lumber, hardware, produce, fertilizers, grass
  seeds and general grocery lines.

#### **BANDOENG, JAVA**

W. V. VAN DEUTEKOM & WAAL, Bandoeng, Java, Established 1908. Cable address, "Electron." Codes used, A. B. C., 5th edition improved, private codes. Branches, The Hague, Holland, Batavia, Java, Soerabaia, Java, Bank references, Netherland Indian Commercial Bank. Imports and exports, general.

#### **BANGKOK. SIAM**

- ANGLO-SIAM CORPORATION, LTD., Bangkok, Siam. Formerly The Siam Forest Company, Ltd. Telegraphic address, "Claricatum, Bangkok." Head office, 2 Fenchurch Avenue, London, E. C. Mr. S. H. Hendrick, general manager for Siam.
- BARRON BROWN & CO., LTD., Bangkok, Siam. Established 1913. Telegraphic address, Leather. Codes used, Western Union, A. B. C., 5th, Broomhalls Imperial, Bentley's. Principal imports: Marine motors, motor cars and trucks, steam engines and boilers, electrical machinery, machine tools and engineering supplies of every description. Principal exports: Rice, tanned hides
- MALCOLM BERANGER. Head office address, Bangkok, Siam. Branch office address, Singapore, 7 Collyer Quay. Established 1913. Telegraphic address, Beranger. Codes used, A. B. C., 5th, Bentley's, Private, Principal imports: Piece goods, rough goods, etc. Principal exports: Gamboge, sticklac, gum benjamin, guttapercha, white and black pepper, gum damar, rice, timber, dye wood, rose wood, sapan wood, ebony, cotton with and without seeds, tin ore, wolfram, para rubber, india rubber, raw silk, cardamons, copra, gambler, mangrove barks, horns, hides, hoops, pork, lard, tallow, animal bones, elephant tusks, sinews, hide fieshing, etc.
- G. KLUEER & CO., Bangkok, Siam. Established 1904.
  Telegraphic address, Kluzer, Codes used, Western Union, A. B. C., 5th, Bentley's. Principal imports: Building materials, sanitary fittings, motor cars, railway materials for War and Navy Department. Principal exports: Dry hides, pepper, sticklac, gum damar, gamboge, guttapercha.
- P. A. MOTIWALLA. Executive office address, 47-48-49
  Rajawongse Road, Bangkok, Siam. Head office, Mead
  Road, Surat, India. Branch office address, 202 Nagdevi
  Street. Bombay, India. Principal imports: Piece goods,
  sundry hardware, as files, locks, hinges, saws, cutlery.
- SIAM ELECTRICITY CO., LTD., Bangkok, Siam. Established 1892. Telegraphic address, Gaelic. Codes used, A. B. C., 5th, Lieber's, Western Union. Principal imports: Hardware, tools, motor cars and tires.
- TIAM TRADING CO., Bangkok, Siam. Established 1912.
  Telegraphic address. Trading. Codes used, A. B. C.,
  A-1, Lieber's, etc. Principal imports: Hardware, tools,
  machinery, chemicals and drugs, fancy goods, textiles,
  provisions, boots and shoes, hats, etc. Principal exports: General produce.

### **BARCELONA, SPAIN**

FICE & SAUMANDERS S. A., Calabria 57 Barcelona, Spain. Established 1913. Cable address, Picandren. Codes used, A. B. C., 5th Edition. General merchants, exporting gunny casings, rags for paper, fabrics and agricultural products.

### BATAVIA, JAVA

- AMSTERDAM BATAVIA HAMDELSVEREEMIGING, RATAVIA. Branch office addresses, Amsterdam Batavia Handelsvereeniging. Soerabaia, and Amsterdam. Established 1912. Telegraphic address, Batam. Codes used, Bentley's, A. B. C., 5th. Principal exports: Copra, cocoa, peanuts (shelled and unshelled), kapok, cocoanut oil, coffee, pepper, sugar, rubber rice, tapioca, tin, etc.
- EUET MYRTLE & CO., Batavia. Branch office addresses, Cherlbon, Semarang, Soerabaia. Established 1845. Telegraphic address, Owen. Codes used, Premier, A. B. C., 5th and 4th. Principal imports: Piece goods.
- SAYERS & CO. Head office, Batavia, Java. Branch office, Semarang, Java. Telegraphic address, "Sayers." Codes used, A. B. C., 4th and 5th Editions, Western Union, Private. Bank references. Hongkong & Shanghai Banking Corporation, Mercantile Bank, and The Netherlands Trading Society. Importers of: Gunnybags, cotton twist, jute twine, shellac, alum, etc. Exporters of: Sugar, peppers, gunnybags and cotton twist, etc.

#### BELVIDERE, ILLINOIS, U. S. A.

WATIONAL SEWING MACHINE CO. Head office, Belvidere, Illinois. Branch offices, 320 West Madison St. Chicago, 290, Broadway, New York City. Established 1879. Telegraphic address, Natsewmach, Codes used, A. B. C., 5th edition and Lieber's. Principal exports: Sewing machines, sewing machine needles and washing machines.

#### **BOMBAY. INDIA**

J. M. MASTE, Hamby Road, Bombay, India. Established 1910. Cable address, "Maste." Codes used, A. B. C., 5th edition. Branches, The Mall, Simla, India. The Exchange, Lucknow, India, etc. Imports: Gum, ivory, Colombo root. Exports: Silks, curios, peppermint, crystals and Japanese produce.

#### BOSTON, MASSACHUSETTS. U.S.A.

BOSTON EXPORT COMPANY, 113 State St. Established 1916. Telegraphic address, Halchem. Codes used, A. B. C., 5th edition, private. Western Union. Principal imports: Cocca, rubber, varnish, gums, skins and hides. Principal exports: Leather, heavy machinery, machine tools, leather and fabric belting, chemicals, heavy hardware, iron and steel.

#### BRISBANE, AUSTRALIA

POGGITT, JONES & CO., LTD. Established 1903. Head office, Turbot St., Brisbane, Queensland. Branch offices, 303 Sussex St., Sydney, 43-45 King St., Melbourne, Victoria, Golden Square, Victoria, King St., Perth, Western Australia. Telegraphic address, "Rex," Brisbane. Codes used, A. B. C., 5th Edition. Bank references, Bank of Queensland, Ltd., Brisbane. Importers of: Nitrate of Potash, nitrate of soda. twine, tin plate, can making machinery, cheese rennet, etc. Exporters of: Provisions, including dairy products.

### BURLINGTON, N. J., U. S. A.

UMITED STATES CAST IRON PIPE & FOUNDRY CO., Burlington, N. J. Established 1899. Branches, 909 Monadnock Bldg., San Francisco, Cal. Bank references, Wells Fargo National Bank. Principal exports: Pipe, cast iron, pipe fittings, chemicals, sugar, house castings, general foundry work.

#### CAIRO, EGYPT

E. AMBAR & CO., 13 Rue El-Fadh 13, Le Caire (Cairo), Egypt. Cable address, "Ambar." Imports and exports: Whiskey, jewelry, beeswax, clothing, confectionery, perfumery, toys, chemicals, chiffons, piece goods, cement, dyes and colors, gums, linen, food stuffs, lumber.

#### CALCUTTA, INDIA

- 8. M. ISHAQ, Chandna, 10 Colootola St., Calcutta, India. Cable address, "Alladiya." Imports and exports: Toilet requisites, small wares, noveities, hosiery, proprietory and patent articles and other articles of general store lines of common use. Highest references.
- P. P. MALLADAROO & CO., 50-1-2 Canning St., Calcutta, India. Established 1870. Cable address, "Bangles." Codes, A. B. C., 5th edition. Bank references, Hongkong & Shanghai Banking Corporation. Imports: Glassware, glass bangles, raw glass, white and colored, in rolls or salt cellar form, safety matches, cement, chemicals, machinery, hosiery, hardware, soap, tin and copper folls, and all materials suitable to Indian market. Exports: Grains and seeds, beeswax, musk, raw rubber and all Indian products, oils, bone meals, etc.

#### CANTON, CHINA

CARTON ECSPITAL, The Bund, Canton, China. Established 1835. Cable address, Poktsal. Codes used, A. B. C., 5th Edition. Bank references, International Banking Corporation. Canton, China, Hongkong and Shanghai Banking Corporation, Canton, China. Importers of: Hospital supplies, drugs and laboratory supplies.

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Insurance Companies:
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The South British Insurance Co., Ltd.
The New Zealand Insurance Co., Ltd.
The Scottish Union & National Insurance Co., Ltd.

surance Co., Ltd.

Agents for Marine
Insurance Companies:
The New Zealand Insurance Co., Ltd.

Phoenix Insurance Co.,

The Guardian Assurance Co., Ltd.

The L'Union Fire In-

Codes Used: Western Union A. B. C. 5th Bentley's Lieber's A. 1

## CHEFOO, CHINA

CHURG PAR & CO., LTD., Broadway. Established 1911.
Telegraphic address, "Chungfah." Codes used, A. B.
C., 5th edition, Lieber's, Western Union and A-1. Principal imports, prepared human hair for hair nets; cotton and linen thread, brass pins, piece goods. Principal exports, human hair nets, handmade laces, embroideries, shantung, pongee silk, etc.

## CHICAGO, ILLINOIS, U. S. A.

MATIONAL EXPORT & IMPORT CO. Head office address, 115 South Dearborn St., Chicago, Ill. Branch office addresses, Amsterdam, Holland; 32 Plantage Nudderlaan, Paris; Bordeaux, France. Established 1910. Telegraphic address, Nerico. Codes, used, A. B. C., 5th, Western Union, Bentley's Lieber's. Principal imports: Natural products from China (peanuts, beans, oils, goose and duck feathers), natural products from Java (kapok, gums, etc.). Manufactured articles of Japan. Natural products of Australia. Principal exports: Steel, iron in all its branches, building materials, chemicals, dyes, colors, automobiles, trucks, accessories.

## CINCINNATI, OHIO, U. S. A.

THE PROCTED & GAMBLE COMPANY, 6th and Main Streets, Cincinnati, Ohio. Branch office address, 609 Hoge Building, Seattle, Wash. Established 1837. Telegraphic address, "Procter." Codes used, A. B. C., 5th Edition, Western Union, Lieber's, Private. Principal imports: Copra, cocoanut oil, soya bean oil, peanut oil, tallow. Principal exports: Soaps, lard substitutes, Crisco, glycerine, cottonseed oils, stearic acid, candles. Bank references: First National Bank, Cincinnati, Ohio.

## CHRISTCHURCH, NEW ZEALAND

- N. Z. Established 1890. Telegraphic address, Arlow. Codes used, A. B. C., 5th, Al, Western Union, Bentley's. Branch office, Import department, 121 Lichfield St., Christchurch, N. Z.; Export department, Colonial Mutual Bidg., Wellington, N. Z. Principal imports: Canned goods, chemicals, spices, hardware, machinery, casings, etc. Principal exports: Meats, grease, hides, leather, Kauri gum, copra, beans, wax, milk.
- PLETCHER, HUMPHRHYS & CO., Cathedral Square. Established 1884. Telegraphic address, Chancery. Codes used, A. B. C., A-1, Western Union. Principal imports, tea. proprietary food products. Principal exports, wool and mutton.
- RORD & MIRAMS, 115 Lichfield Street. Telegraphic address, Saxon. Codes used, A. B. C., 5th edition. Principal imports, dried fruits, tinned fish, chemicals, salt, general grocery lines, benzine, kerosene. Principal exports, New Zealand produce, cheese, butter, honey, flax, fresh fruit, etc.
- SUCKLING BROS., LTD., 18 Dundas St., Christchurch, New Zealand. Established 1871. Telegraphic address, "Footwear." Codes used, Lieber's. Principal imports: Boots (men's and women's), leathers, box calf, tan calf, kid, sole leather, boot linings, grindery, bootmaking machinery. Branch office address. Harbutt, Bldg., Victoria St., East, Auckland, New Zealand.

## **CLAVERIA, PHILIPPINE ISLANDS**

BAN YEK SIEA PLANTATION & CATTLE RAWCE CO., INC., No. 3. Claveria. Davao, P. I. Established 1916. Cable address, "Ban Yek Plantation." Codes used A. B. C. Imports: Merchandise. Exports: Hemp and copra.

## CLEVELAND, OHIO, U. S. A.

- WATIONAL REPIRING CO., Cleveland, Ohio. Manufacturers of paraffin wax. powder, matches, candles, wax paper. Exporters: Automobiles, motorcycles, tractors, tires and all accessories.
- THE CLEVELAND PHEUMATIC TOOL COMPANY. Established 1899. Telegraphic address, Pneumatic. Codes used, A. B. C., Lieber's, Western Union. Principal exports: Pneumatic tools.

## COLUMBUS, OHIO, U. S. A.

THE JEFFREY MANUFACTURING COMPANY, Columbus, Ohlo, U. S. A. Machinery for every industry, complete lines of elevating machinery, conveying machinery, power transmission, chains, screens, crushers, pulverizers, shredders, portable lime pulverizers, portable wagon loaders, coal mining machinery, electric locomotives, mine ventilating fans. All overseas work is handled exclusively by the export division by men of wide experience in exporting; thus the purchaser of Jeffrey products is assured satisfactory service and expert attention to his demands.

### COPENHAGEN. DENMARK

States, 26 St. Annae Plads, Copenhagen, Denmark. Branch office addresses, Copenhagen, Christiania, New York, London, Buenos Aires, Rio de Janeiro, Valparaiso, La Pax, Bahia, Yokohama, Siberia. Established 1918. Telegraphic address, "Erik Krag." S. F. Codes used, Lieber's, A. B. C., 5th Edition, Bentley's. Principal imports: All principal Japanese and South American products. Bank references: Wells Fargo National Bank, San Francisco; National City Bank, N. Y.

## DAIREN, SO. MANCHURIA

- P. J. BARDEES, 85-87 Yamagata-dori, Dairen, South Manchuria. Established 1910. Cable address, "Bardens." Codes used A. B. C. 5th Edition, Western Union, Bentley's Complete Phrase Code. Branch offices, 9 Tientsin machi, Tsingtao. Bank references, Hongkong and Shanghai Banking Corporation, Dairen, Russo Asiatic Bank, Dairen, Yokohama Specie Bank, Ltd., Dairen. Importers of railway material, woolen goods, wines and spirits, chemicals and drugs, dynamite and other explosives, firearms and ammunition.
- THOMPSON, HANNAM & CO. Head office, 47 Echigo Machi, Dairen, South Manchuria; branch office, London, (H. D. Thompson & Co., 21 Culium Street). Established 1911. Telegraphic address, Thompson. Codes used, Lieber's, Western Union, A. B. C. 5th edition, A. B. C. 5th edition improved, Bentley's complete phrase code, Engineering 2nd edition. Principal imports: Hardware such as nails, screws, hinges, etc., gunny bags, motor accessories, tires and general merchandise, ton plate for making tins for bean oil export. Principal exports: Beans, hempseed, sesamum, bean oil, bean cake, kaoliang, buckwheat, talc and other Manchurian products.

## **DUNEDIN, NEW ZEALAND**

- THE COOPERATIVE FRUIT GROWERS, Dunedin, New Zealand. Established 1907. Telegraphic address, Central. Codes used, A. B. C. 5th. Principal imports: Apples, chemicals, orchard implements, peanuts, eggs, motor cars, onions, oranges. Practical exports: Potatoes, apples, eggs, hides, fat, rubber, cattle, sheep, pigs, poultry.
- DOWAGEN'S ROPE & TWIME CO., LTD., Box 94, Dunedin, N. Z. Established 1876. Telegraphic address, Donaghys. Codes used, A. B. C. 5th Edition, Western Union, A-1, Western Union, five letter edition. Branch office address, Stanley St., Auckland, N. Z.; Rosedale, North Invercargill, N. Z. Importers of: Hemp, yarn, twines. Exporters of: Twines, ropes, fibre. Bank references Bank of New Zealand, Dunedin, N. Z.

## FOOCHOW, CHINA

- BATHGATE & CO., Foochow, China. Established 1879.
  Telegraphic address, Bathgate. Codes used, Bentley's,
  Lieber's, A. B. C. 5th A-1, Wetmore's and others.
  Agents for: Nippon Yusen Kaisha, Toyo Kisen Kaisha,
  American Asiatic S. S. Co., American & Manchurian
  Line, Java-Pacific Line, Java-China-Japan Line. Principal exports: Tea.
- M. W. CREIG & CO., Foochow, China. Established 1890. Cable address, "Greig." Codes used, A. B. C. 5th Edition, IJeber's, Western Union, Scott, Watkins, Wetmore, Private. Bank references, Hongkong & Shanghai Bank, Chartered Bank of India, Australia & China. Importers along general lines. Open to agency for Marine motor engines of strong and simple make. Exporters of tea.

CABLE ADDRESS: PALMO NEW YORK Bentley's, Lieber's and ABC Codes

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## GALVESTON, TEXAS, U.S.A.

THE J. H. W. STEELE COMPANY, Galveston, Texas.

Branch office addresses, New York, New Orleans, Savannah, Chicago, Texas City. Principal imports: None.

Principal exports: Cotton naval stores. Bank references: Anglo and London, Paris.

## **GLASGOW, SCOTLAND**

PIEDLAY, RICHARDSON & CO., LTD. Head office address, 34 W. George Street, Glasgow, Scotland. Branch addresses, Iloilo, Panay, P. I.; Kobe and Yokohama, Japan; Hankow, China. Established about 1838. Telegraphic address, Findlay. Codes used, A. B. C. A-1, Bentley's, Western Union. Principal imports: Cotton goods, steel. hardware, lumber and general. Principal exports: Phillippine lumber.

### HOBART, TASMANIA

Telegraphic address, Pavo. Codes used, Pantelegraphy (Tybo), A. B. C., Al, Western Union, Bentley's. Branch office, 112 Market St., San Francisco, Cal. Bank references, Commercial Bank of Tasmania, Ltd. Principal imports: Tinplates, wire nalls, box strapping, colryarn, hauling ropes, can making machinery, papers (vegetable parchment and fruit wrapping) pure Benzolete. Principal exports: Jams, jellies, canned fruits, tomato and Worcestershire sauces, evaporated apples, dried vegetables, hops.

## HONGKONG, CHINA

- BANKER & CO. Head office address, Hotel Mansions, Hongkong. Branch office address, Wuchow, West River. Established 1892. Telegraphic address, Banker. Codes used, Bentley's Western Union, A. B. C. 5th Lieber's. Principal imports: Steel products, hardware, ironmongery, machinery, sundries, provisions. Principal exports: Rice, essential oils, wood oil, China produce generally.
- BOTELEO BROS. Head office address, Alexandra Buildings. Branch office addresses, No. 82, Szechuen Road, Shangha!, 214 Front Street, San Francisco. Cal. Established 1912. Telegraphic address, Bothelho. Codes used, A. B. C. 5th, Bentley's, Scott's 10th edition, Western Union, A-1, Private Codes. Principal imports: Wheat flour and foodstuffs. Principal exports: All lines of China produce, specializing in rice, peanuts, China lard.
- CARVALMO & COMPANY. Head office, Alexander Bldg., Hongkong, China; branch office, 525 Hearst Bldg., San Francisco. Established 1916. Telegraphic address, Carvalho. Codes used, A. B. C. 5th edition. Bentley's, Western Union, Lieber's, and private codes. Principal imports: Textiles, flour, iron and steel products, big lead, quicksilver, window and plate glass, table and bar soap, sugar, etc. Principal exports: Essential oils, peanut oil, cocoanut oil, tea oil, wood oil, metals, bristles, cassia, firecrackers, ginger, lard, rice, silk plece goods, aniseed, tea, tobacco leaf, peanuts, hides and skins.
- **GAEDAR & CO.** Head office No. 1 Onlan Street, Hongkong. Branch offices, Kowloon, China, Bombay, India. Telegraphic address, Radzag. Codes used, A. B. C. 5th edition. Principal imports, Indian, Japanese and American merchandise, such as provisions and piece goods, toys, novelties, cottons and silks, leather bags, etc. Principal exports, Chinese silks, preserves, cassia, etc.
- JOHF GIBBS & CO., 7 Lun Fat Street, Hongkong, China. Established 1913. Telegraphic address, Yip. Codes used, A. B. C. 5th edition, Lieber's 5 letter code, Western Union 5 letter edition and private. Principal imports, all kinds of engines and machinery, rubber tires and all vehicles, rubber goods, paints, oils and colors, bicycles and sundries, iron and steel goods, cotton and woolen piece goods, tinplate, wire nails, electrical goods and all classes of universal merchandise. Principal exports, bristles, cassia, cassia oil, cane, palm leaf fans, peanuts and oil, rattancore, star aniseed and oil split bamboo, wood oil, camphorwood chests, rattan and seagrass furniture and China matting, etc.
- MESSES. GIEB, LIVINGSTON & CO. Head office, Hongkong, China. Branches, Shanghai and Foochow. Established 1836. Telegraphic address, Gibb. Codes used, A-1. A. B. C. 5th edition, Scott's code, Western Union and Bentley's. Importers and exporters of all kinds. Bank references, Mercantile Bank of India.

- GLOBE FURNISHING & EXPÔRT CO., Hongkong, China. Established 1914. Telegraphic address, "Glofeco." Codes used, A. B. C. 5th Edition, Lieber's Western Union. Bentley's and private codes. Principal imports: All kinds of goods suitable for Chinese markets. Principal exports: Sea-grass and rattan furniture, sea-grass matting, bamboo blinds, blackwoodware, camphorwood boxes, sea-grass strings and cords, bamboo splits, rattanware and rattan splits, peanut oil, star aniseed oil, cassia and oil, and all kinds of Chinese products. Bank references, Hongkong and Shanghai Banking Corporation, Hongkong.
- THE KONGKONG MERCANTILE CO., LTD., 7 Queens' Road Central, Hongkong, China. Established January, 1916. Telegraphic address, Kotewall Hongkong. Codes used, A. B. C. 5th Edition, Bentley's, Liebers, Western Union and private. Principal imports: Provisions, machinery, pâints, drugs and chemicals, cotton piece goods, woolen goods, iron, steel and other metal products, old newspapers, paper, soap, umbrellas, cotton, yarn, plate glass, window glass, quicksilver, lead, etc. Principal exports: Siam, Tonkin and China rice, essential olis and nut olis, Yunnan tin, cassia, peanuts, rattanware, bristles, fireworks, gallnuts, ginger, lard, straw matting, tea, antimony, star aniseed, canes, etc. Branch office, address, 5 Second Road, Western Bund, Canton, China.
- W. G. HUMPHREYS & CO., 5 Duddell St., Hongkong, China. Branch offices, at Canton, Swatow, London. Cable address, "Abcona." Bank references, Hongkong & Shanghai Banking Corporation; The Chartered Bank of India, Australia and China. Importers of: Piece goods, soap, machinery, leather, needles. Exporters of: Hides, wood oil, human hair, bristles, oaken coal, essential oils, cassia, peanuts, minerals.
- IP TAE & COMPANY, 8 Des Voeux Road Central, Hongkong, China. Established 1915. Cable address "Iptak." All standard codes used and also private codes. Bank references, Hongkong and Shanghai Banking Corporation of Hongkong. Imports: Metals, metal products, ship chandlers' supplies, building materials, food products, wines and liquors, boots and shoes, leathers, dry goods, piece goods, chemicals, toilet articles, drugs, stationery and papers, and other sundries. Exports: Rice, peanuts, walnuts, wood oil, bean oil, tea oil, cassia lignia, cassia oil, aniseed oil, hides and all other Chinese crude and manufactured products.
- JAVA CHIMA JAPAN LIME, York Building, Hongkong, China. Branch office addresses, San Francisco, Kobe, Yokohama, Manila, Shanghai, Canton, Batavia, Cheribon, Semarang, Soerabaia, Singapore. Telegraphic address, "Javalyn." Codes used, A. B. C. 5th Edition, Scott's 10th Edition, Western Union, Bentley's, Principal imports: Pepper, coppa, taploca flour, rubber, tin, tea, kapoc, copal, fibre, cocoanut oil, coffee. Principal exports: Iron and steel, paper, automobiles, cotton, soda ash and caustic soda, cigarettes, tobacco, groceries, canned goods, general merchandise.
- KARANJIA & CO., 2 Chater Road, Hongkong. Head office. Branch offices in New York and San Francisco, U. S. A. and Shameen, Canton. Established 1917. Telegraphic address, Loswan. Codes used, Bentley's, Lieber's, Scott's 10th edition, Western Union and private codes. Principal imports, steel plates, tin plates, hardware, groceries, tanning materials, heavy chemicals, flour, sundries, etc. Principal exports, rice, cassia, star aniseed, peanuts, beans, bristles, hides, antimony, essential oils, and various other raw China produce; poanut butter.
- HAXIM & CO. Head office address, No. 3 Queen's Building, Hongkong. Established 1916. Telegraphic address, Maxim. Codes used, A. B. C. 5th, A-1, Bentley's, Western Union. Principal exports: Rice, silk goods, human hair, cassia, essential oils, bristles, preserves, matting, mats, tobacco, leaf, peanuts, star aniseed, rattanware, wood oil, all descriptions of China produce and manufactures. Branch office addresses, Tacoma, Portland, Vancouver, Chicago.
- T. FURSUMALL & CO., 1 on Lan Street, Hongkong, China. Branch offices, Kussia Terrace, 7 French Concession Shameen, Canton, China; 27 Sanomiya-cho, 3 Chome, Kobe, Japan. Established 1998. Telegraphic address. "Pursumal." Codes used, A. B. C. 5th Edition and private codes. Principal imports: Indian and American provisions, stationery, papers, watches, fancy goods, novelties, razors, typewriters, boots, etc. Principal exports: Slik and pongee sliks, sliver and brasswares, camphor-wood trunks, ivory and bone fans, chess board and playmates, cassia, preserves, earthenware, etc. Bank references: Chartered Bank of India.
- SEDICE BROS & CO., 41 Haiphong Road, Kowloow, Hongkong, China. Established 1914. Telegraphic address, "Jollity." Codes used, private codes and A. B. C., 5th Edition. Principal imports: English and Indian merchandise, such as provisions, silver ware, toys, leather goods, etc. Principal exports: Silk piece goods, cassia, peanuts, camphor-wood chests, preserves, etc. Branch office addresses, Abdul Rehman St., Bourbaya, India.



# Metropolitan Press

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- ARES & CO., No. 1 Duddell Street, Hongkong, China. Established 1888. Telegraphic address, Soavita. Use all principal codes. Principal exports: Rice. Are rice polishers.
- STEPHENS & CO., H. 16/22 Queen's Road Central. Established 1905. Telegraphic address, Herberto. Codes used, A. B. C. 5th, Bentley's and private. Principal imports, hardware, bedsteads, hosiery, boots and shoes, underwear, confectionery, piece goods. Principal exports, rice, matting, ginger, aniseed oil, tallow, hides,
- M. A. TYE & BROS., 15 Pottinger St., Hongkong, China. Established 15 years. Cable address "Tye's." Codes used, A. B. C. 5th Edition. Bank references, International Banking Corporation, Hongkong. American Consul General of U. S. A., Hongkong. Importers of: Confectionery, groceries, tollet articles, general commission agents and agency The Carters Ink Co., inks, mucliage, carbons and typewriter ribbons, American Pad and Paper Co. stationery lines, Wm. Wrigley, Jr., Co., chewing gums. Exporters of: All kinds of China products. products
- UNION TRADING COMPANY. Established 1904. Office, Prince's Bidg., Hongkong, China. Telegraphic address, "Hardware." All codes used. Bank references, Hongkong & Shanghai Banking Corporation. Importers of iron and steel products, hardware, machinery, canned provisions, sundries, etc. Exporters of rice, lard, peanuts, hides, and skins, wolfram, antimony ores, etc.
- Central, Hongkong. Established 1913. Telegraphic address, Occasion. Codes used, A. B. C. 5th edition, Lieber's, Bentley's, Western Union, Private. Principal imports: Metals and hardware. Principal exports: Tin. spelter, copper, mineral ores, wolframite, molybdenite, galena, essential oils, rice, beans, wood oil, feathers, hides, general Chinese produce.

## HONOLULU, H. T.

- AMERICAN FACTORS, LTD., Honolulu, Hawaii. Branch office addresses, Hilo, Kailua, San Francisco and New York. Established 1918. Telegraphic address, "American Factors." Codes used, Western Union and A. B. C. 5th Edition. Principal imports: General merchandise. Principal exports: Sugar, rice, coffee, honey, molasses. Bank references: Any bank.
- THEO. E. DAVIES & CO., LTD. Head office address, Kaahumanu Street, Honolulu, H. T. Branch office addresses, Hilo, Hawaii; 260 California street, San Francisco; 24 State Street, New York City. Principal imports: Groceries, dry goods and hardware. Principal exports: Sugar, canned pineapples and coffee.

  HAWAIIAM PERTILIEE CO., Honolulu, Hawaiian Islands. Established 1898. Telegraphic address, "Fertilizer." Codes used, Bentley's. Principal imports and exports: All fertilizers. Branch office address, 500 Welch Bldg., San Francisco. Bank references, Wells Fargo Nevada National.
- RAWAHAN PINHAPPLE COMPANY, LTD. Head office address, Iwilei, Honolulu; branch office address, 112 Market Street. Established 1901. Telegraphic address, Pine, Honolulu. Code used, Western Union. Principal export: Canned pineapple.

## INDIANAPOLIS, INDIANA, U. S. A.

BEPUBLIC CREOSOTING COMPANY, Merchants Bank Building, Indianapolis, Indiana. Branch office addresses, Seattle, Minneapolis, Mobile, Norfolk. Established 1898. Principal imports: Creosote and coal tar products. Bank references: Seattle National Bank, Seattle; In-diana National Bank, Indianapolis.

## IPOH, PERAK, MALAYA

- AYLESBURY & HUNTER, LTD., Ipoh, Perak, F. M. S. Cable address, "Aylesbury." Codes used, A. B. C., Broomhall's. Branch office, Iaiping, Illuk Anson, Iapoh, Penang. Bank references, The Chartered Bank of India Australia and China. Importers of: Estate supplies, machinery, motor cars. Exporters of: Rubber, tin,
- CHARLES CREATER & CO., 39 Station Road, Ipoh. Fed. Malay States. Established 1910. Telegraphic address, Grenier. Codes used, A. B. C. 5th. Principal imports: Food products, provisions, canned goods, etc.; stationery, paper, arms and ammunition, watches, clocks, fancy goods, typewriters, razors, camp beds, cheap footwear for the bazaar trade, California wines. Principal exports: Indian tea shipped direct from India by our agents.

## JEANNETTE. PA.. U. S. A.

MCKEE GLASS COMPANY, Jeannette, Penn. Branch office address, 318 2nd Ave., South Seattle, Wash. Established 1853. Telegraphic address, Jeannette, Pa. Principal imports: Loafale sponges, light blow glassware. Principal exports: Airport glass, table glassware, fruit packers' bottles, prescription ware, etc. Bank references: National Bank Commerce; Union Trust & Savings Deposit ences: Natio ings Deposit.

### KANAGAWA-KEN. JAPAN

MIPPONOPHONE CO., LTD. Established 1909. Head office address, Kawasaki, Kanagawa-ken, Japan. 25 branch offices and 400 agencies all over Japan. Telegraphic address, "Nipponola." Codes used, A. B. C. 5th Edition, New Business Code. Bank references, Chartered Bank of India, Australia and China; The Yokohama Specie Bank of India, Australia and China; The Yokohama Specie Bank; the Hongkong & Shanghai Bank; Sumitomo Bank. Importers of: Wire, machine tools, emery wheels, etc. Exporters of: Phonographs, automatic vacuum ice cream freezers, etc.

### KANSAS CITY, U.S. A.

- BBROWITE ENVELOPE CO., Kansas City, Missouri. Pacific Coast branch, 514 Call Bidg., San Francisco, Cal. Telegraphic address, 514 New Cail. Principal exports: Envelopes, blank or printed, window envelopes, commercial official sizes, special hand made envelopes, envelopes for every need. We wish to sell direct to the consumer of envelopes and not in a wholesale way. Chas. R. Leonard, Pacific Coast manager. Bank references, Wells-Fargo Nevada National Bank, San Francisco.
- C. EIRSELLA, 1104 Union Ave. Telegraphic address, Kinsella. Codes used, A. B. C. 5th Edition, A. B. C. 5th edition improved, Western Union, Bentley's, Lieber's, Cross, Topps. Imports and exports: Copra and oil, seeds, vegetable lard, fish, oleo oils, tallows, greases, stearines, soaps, provisions, produce.

## KOBE, JAPAN

- E. GILES, Exporter. 10. Goko-dori 1 chome, Ono, Kobe. Established 1908. Cable address, Giles. Codes, A. B. C. 5th, Western Union, Bentley's. Principal exports: Straw, hemp and chip braids, straw and paper, Panamahats, silks and silk goods, cotton and hosiery goods, all kinds of produce, matting and rugs of all kinds, toys, brushware, basketware, chinaware, glassware, paperware, woodenware, lacquerware, metalware, etc.
- HINDMARSH & CO., 1163 Higashi, machi, Kobe, Japan. Established 1918. Telegraphic address, Hindmarsh. Codes used, Bentley's, A. B. C. 5th edition. Principal exports: Oils, beans, seeds. Bank references, International Banking Corporation, Kobe; Chartered Bank of India, Australia and China, Kobe.
- **EAGAWA & CO.** Head office address, 121 Isogamidori 8 chome, Kobe; branch office address, Ishihara & Kagawa, 16 Collyer Quay, Singapore, China. Established 1912. Telegraphic address, Kagawa, Kobe. Codes used, A. B. C. 5th edition, A-1, Lieber's Standard, Lieber's 5 letter code and Bentley's. Principal imports: Chemicals, workshop tools, raw materials in general. Principal exports: Metals and metalware, enameled ware, copper and brass bars, wires, sheets and tubes, water and gas fittings, workshop tools, wire ropes, cycles, cycle parts and accessories, motor tires and rubberware in general, toys, glassware and porcelain, medical and surgical instruments, cotton blankets, cotton goods in general, electrical fittings, paper and nickeled ware, etc.
- KOIRE & CO., Kobe, Japan. P. O. Box 299. Cable address, Koike, Kobe. All codes used. Dealers in: Buttons, brushes, chemicals, glassware, isinglass, produce, paper ware, piece goods, paint, rubber ware, stationery, straw ware, toilet ware, vegetable oils, wax, etc.
- RUHABA & CO., LTD. Established 1918. Head office Kuhara, Shoji, Kaisha, Ltd. Kobe, Japan. Branch offices, Tokyo, Osaka, Yokohama, London, New York, San Francisco, Paris, Rome, Port Said. Bombay, Calcutta, Colombia, Singapore, Shanghai, Tientsin. Telegraphic address "Kuhara." All codes used. Importers of all Oriental products. Exporters of steel, iron, machinery, chemicals, etc.

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- EYOSHIM-YOKO, LTD., Sakayemachi 4 chome, Kobe, Japan. Established 1907. Telegraphic address, Kyoshin-yoko, Kobe. Codes used, A. B. C. 5th Edition, and private codes. Principal imports: Metals, chemicals and drugs, machinery, leather, pulp. Principal exports: Beans, peas, seeds, cereals, oils, Oriental produce. Branch office address, Vladivostok, Moscow, Blagoweschensk, Habarowsk, Harbin, Fusan. Bank references, The Yokohama Specie Bank, Ltd.; The Kobe Kawasaki Ginko, Ltd.
- G. LATTARA Y COMPANIA, Kobe, Japan. Established, 1917. Telegraphic address, Lazzara. Codes used, A. B. C. 5th Edition. Bentley's. Branch office addresses, Mauban, Tayabas, P. I., Shanghai, New York, Paris, Milan, Harbin, Vladivostok. Principal imports: Cotton goods, canned goods, hardware, cement, vegetables, cereals chemical products. Principal exports: Hemp, copra, hides, wax, lumber, tobacco, gum. Bank references, National Bank & Bank of the Philippine Islands.
- THE MORISARI TSURUE SMOTEM, 93 Isobe-dori. 4 chome, Kobe, Japan. Established, 1915. Telegraphic address, "Morisaki," Kobe. Codes used, A. B. C. 5th Edition and Improved Western Union. Principal imports: Sundries and American natural products. Principal exports: Sundries and natural products, including silk piece goods, silk fancy goods, piece goods, cotton goods, leatherware, porcelain, glass ware, clocks and watches, optical goods, straw braid, hardware, curios, lacquerware, antimonware, foil, woodenware, fancy goods, enamelware, paper, hats.
- SAGAWA & CO., 111 Higashi-machi, Kobe, Japan. Cable address, "Sagawa Kobe." All codes. Importers of Chemicals, hardware, paints, instruments. Exporters of hardwares, earthenwares, glasswares, rubber goods, piece goods, braids, brushes, buttons, corns, dyes, celluloid goods, electrics, enamel wares, hosiery, leather goods, matches, mattings, metals, needles, oils, papers, russ, silk goods, stationaries, starches, toys, watch glass, wax, yarns, cotton goods. Bankers, The Yokohama Specie Bank, Kobe, Japan.
- SAKAGUCEI & CO. Head office, 24 Motomachi Itchome, Kobe, Japan. Branch offices at Calcutta and Bombay, India. Established, 1901. Telegraphic address, Sakaguchi. Codes used, A. B. C. 5th Edition, A-1, Western Union, Lieber's and private. Principal imports, iron, steel, manganese, machines and instruments, motor cars and accessories, typewriters, shellac, rape seeds, rape cake, chemicals, etc. Principal exports, silk, cotton, woolen, piece goods and manufactures; fancy goods, hardware and chemicals; machines, instruments and fittings; glass, porcelain and earthen wares, papers and stationeries, toys and game requisites; provisions and general products; miscellaneous articles such as matches, mats and mattings, straw, etc.
- THE SEISYEI CO., LTD., 3 Chome Sahaemachi, Kobe, Japan. Established, 1887. Telegraphic address, Shinyel. Codes used: All codes. Branch office address, Honcho, 3 Chome, Yokohama. Importers of dyestuff, chemicals, steel, machinery. Exporters of silk materials, hardware, oils, beans, etc. Bank references, The Yokohama Specie Bank, Ltd.
- ESTINYUGUMI & CO., No. 64 Naniwa-machi, Kobe, Japan. Established, 1903. Telegraphic address, Shinyugumi. Codes used, A. B. C. 5th Edition, Bentley's complete code. Branch office addresses, Kano & Co., Yokohama, K. Asano, Pelligrini, Buenos Aires, South America; Odate Ishibashi & Co., Suva Fiji, Sydney and Melbourne, Australia. Principal imports: Shells, hemp, hat sewing machine, iron. Exporters of general goods. Bank references, Yokohama Specie Bank, Kobe; Bank of Taiwan; Hongkong & Shanghai Bankking Corporation; International Banking Corporation; Chartered Bank of India, Australia, China; Kashima Bank; Sumitom Bank.
- SUEUKI & COMPANY. Head office, Kobe, Japan; branch offices, New York City; London, England; San Francisco, California; Seattle, Washington. Established, 1887. Telegraphic address, Suzuki. Principal exports: Sugar, beans, vegetable wax, rape oil, bean oil, all other oils, spelter, flour, peas, tinned fish, rice, cereals, isinglass, chemicals, sulphur, copper, coal, lumber, refined camphor, safety matches, raw silk, habutae, chlorate potash, potato-rice-bean starch, cocoanut oil, fatty acid, hardened oil, glycerine, bean cake, bean flake tea, rubber, chests, cement, coal and cokes, copper sheets, anilline dyes, and superphosphate. Principal imports: Timbers, wheat, wool, steel, machinery, chemicals, etc.; flour, fertflizers, metals, cotton, iron, ores, shipbuilding and railway materials.
- YAMASKITA KISEM KAISMA, LTD. Established, 1917. Head office, 47 Nichome Sakayemachi-dori, Kobe, Japan. Branch office, Tokyo, Yokohama, Moji, Taipei, Keelung, Takou, Hongkong and Singapore. Telegraphic address, "Yamashita." Codes used, A. B. C. 5th Edition, Scott's 10th Edition, Bentley's. Bank references, Yokohama Specie Bank, Kobe; Bank of Taiwan, Kobe and Sumitomo Bank, Kobe. Steamship service.

- Y. TANURA & CO. Head office, 29-30 Sannomiya, Kobe, Japan; branch office, 45 Bingo Machi Nichome, Osaka, Japan. Established, 1875. Telegraphic address, Tamken. Codes used, A. B. C. 5th Edition and improved, A-1. Lieber's 6 letter, Bentley's, Western Union, Schofield's Electric Phrase code and private codes. Principal imports: Drugs, chemicals, metals, paper, cotton and woolen textiles, leathers, hides and all kinds of raw materials and general merchandise. Principal exports: Manufactures of cotton goods, hosiery, underwears, etc., cotton and silk knitted goods, buttons, mother-of-pearl, shell, bone and horn buttons, and all kinds of Japanese manufactures and produce, silk piece goods, etc.
- M. & S. YOSHIMURA BROS., No. 184 Kano-cho, 4-Chome, Kobe, Japan. Cable address, "Yoshimura Gifuken." Codes used, A. B. C. 5th edition, Bentley's and private. General importers and exporters and manufacturers' agents.

## KUALA LUMPUR, FED. MALAY STATES

- BOUSTEAD, HAMPSHIEE & CO., LTD. Head office address, 1 Embankment, Kuala, Lumpur, Fed. Malay States. Branch office addresses. Port Swettenham, Klang, Teluk Anson, Ipoh. Established, 1910. Telegraphic address, Hampshire. Codes used, Bentley's, Lieber's, Premier codes, Scott's, 10th Edition, A. B. C. 4th and 5th. Principal imports: Wire nails, corrugated iron, box strapping, axes, barbed and galvanized wire, cement, paints, oils.
- A. C. HARPER & CO., LTD. Head office address, Kuala Lumpur, Fed. Malay States. Branch office addresses, Klang, Port Swettenham, Port Dickson, Seremban. Malacca, Johore, Bharu, London. Telegraphic address, Harper. Codes used, A. B. C. 4th and 5th, A-1 Bentley's, Scott's, Broomhall's, private. Principal imports: Hardware, chemicals, oils, paints, etc.; piece goods, soft goods, etc. Principal exports: Rubber, coffee, copra.

## LIVERPOOL, ENGLAND

ALEX. ROSS & CO. Head office, Whitechapel, Liverpool, England. Branch offices in Hongkong, Swatow and Shanghai. Established, 1902. Telegraphic address, Rotunda. Codes used, A. B. C. 5th, Lieber's, Western Union, Bentley's. Principal imports: Leather, soap, flour, provisions and all lines of sundries, automobiles, motorcycles, marine motors and all accessories, electric lighting plants. Principal exports, ginger, essential oils.

## LONDON, ENGLAND

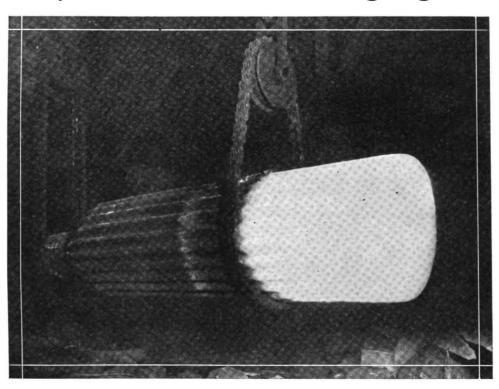
- BETTS CO., LTD. Head office address, 1 Wharf Road, London, N., England. Branch office address, La Bastide, Bordeaux, France. Established, 1804. Telegraphic address, Checkmate, London. Codes used, A. B. C. 5th. Principal exports: Largest makers in world of bottle caps, makers of collapsible tubes, perfume sprinklers, tea, lead, tin and composition folls.
- COMMERCIAL BANK OF SPANISE AMERICA, LTD.
  Head office, 9 Bishopsgate, London, E. C. England.
  Branch offices, Manchester, England, Bogota, Colombia,
  Madellin, Colombia, Managua, Nicaragua, Iquitos, Peru;
  San Salvador, Sansalvador; Carracas, Venezuela; Guayaquil, Ecuador; Manta, Ecuador. Established, 1911.
  Telegraphic address, Mancomunar. Codes used, Century, Standard, Western Union, Lieber (and 5 letter)
  A. B. C. 5th Edition, Standard, Bedford McNeill, Samper,
  Bentley's. Pincipal imports; coffee, cocoa, hides, skins,
  rubber, indigo, metals, balsam, vegetable ivory. Principal exports, all classes of American goods.
- DIEGWALL COTTS & CO. Head office, 8 St. Helens place, London, England. Branch offices, Mitchell Cotts & Co., Capetown; Mitchell Cotts & Co., Port Elizabeth; Wm. Cotts & Co., Johannesburg; Wm. Cotts & Co., Durban, Natal; Dingwall Cotts & Co., Vancouver, B. C. Established, 1913. Telegraphic address, Dincotts. Codes used, A. B. C. 5th Edition, Scott's 10th Edition, Western Union, Globe. Principal imports: Lumber, machinery and all manufactured goods. Principal exports: Wire rope and other British goods, tanning bark, etc., from South Africa. Oriental goods.
- London, E. C. B. England. Established, 1911. Cable address, "Hibbert." Codes used, A. B. C. 5th Edition, Bentley's. Branch offices: Seremban, Negri Semblam, F. M. S. Klang, Selangor F. M. S. Importers of wines, spirits, bottled beers, cigars, cigarettes, tobacco.

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ROBERT C. MONTEAGLE, President and General Manager

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Crank Shafts Stern Frames Rudder Posts Rudder Stocks Rudder Arms Connecting Rods Piston Rods Plate Bending Rolls Dummy Turbines Line Shafts

Thrust Shafts
Tail Shafts
Valve Stems
Eccentric Rods
Cross Heads

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J. F. Duthle & Company, Seattle, Wash.
Seattle North Pacific Shipbuilding Co., Seattle, Wash.
Puget Sound Machinery Depot, Seattle, Wash.
Todd Dry Dock & Construction Company, Tacoma,
Wash

Wash.

Long Beach Shipbuilding Company, Long Beach, Cal.

Moore Shipbuilding Company, Oakland, Cal.

G. M. Standifer Construction Corporation, Portland,
Ore.

Pacific Marine Iron Works, Portland, Ore. Grant Smith Porter Ship Co., St. Johns, Portland, Ore. Albina Engine & Machine Works, Portland, Ore. Northwest Steel Company, Portland, Ore.
Willamette Iron & Steel Company, Portland, Ore.
Columbia River Shipbuilding Company, Portland, Ore.
Patterson-McDonald Shipbuilding Co., Seattle, Wash.
Anderson Shipbuilding Company, Houghton, Wash.
Seattle Machine Works, Seattle, Wash.
Hendricks Manufacturing Company, Seattle, Wash.
Vulcan Iron Works, Seattle, Wash.
Supple-Ballin Shipbuilding Company, Seattle, Wash.
Pacific Machine Shop and Manufacturing Co., Seattle,
Wash.

Markey Machinery Company, Seattle, Wash. Gulowsen Grei Engine Works, Portland, Ore. J. Coughlan & Sons, Vancouver, B. C. Yarrows, Ltd., Victoria, B. C. Harine, Ltd., Vancouver, B. C. Wallace Shipyards, Ltd., No. Vancouver, B. C.

- DODWELL & CO., LTD. Head office, St. Mary Axe, London, England. Branch offices, 163 Water street, New York City; Henry building, Seattle, Washington; Tacoma building, Tacoma; Concord building, Portland; 160 California street, San Francisco; Yorkshire building, Vancouver, B. C., and Belmont block, Victoria, B. C. Telegraphic address, Dodwell. Codes used: Scott's 1895, 1896 and 1906, A. B. C. 4th and 5th, A-1 1888 Edition, Watkin's 1884, Standard, Lleber's, Bentley's. Principal exports: Desiccated cocoanut, spices, peanuts, cotton, cutch, tea, rice, walnuts, drawing instruments, hen egg albumen and yolk. Principal imports: Lumber, flour, hay and oats, evaporated milk.
- FIREDERSON LANE & CO. Head office, Salisbury House, Finsbury Circus, London, E. C. Q. Branch offices, Buenos Aires, Canary Islands, Barcelona, Cape Town, Johannesburg, Calcutta. Established, 1867. Telegraphic address, Kuhner. Codes used, Lieber's, A. B. C. 5th, A-1, Broomhalls. Principal imports, cocoa, sugar, cotton, wool, honey, beans, tallow and all produce. Principal exports: General merchandise, Manchester goods, provisions, metals, hardware, machinery and every description of manufactured goods. Sole agents for Dr. Siegert's Angostura Bitters.
- E. BIGOLD & BERGMANN, 69 Bishopsgate, London, England. Established, 1876. Cable address: "Paroquet." Codes used, Lieber's, A. B. C. 5th Edition. Branches: Calcutta, India; Singapore, Straits Settlements. Bank references: London County Westminster Bank and all Eastern banks in London. Exports: Piece goods, metals, provisions, hoslery, haberdashery, hardware and general merchandise.
- SANDILANDS BUTTERY & CO. Penang, Head office address, London House Crutched Friars, London. Branch office address, Sandilands Buttery Co., Singapore. Established about 1865. Telegraphic address, Sandilands, Penang. Codes used, A. B. C. 5th, Western Union, Broomhall's Rubber & Ordinary, Bentley's. Principal imports: General. Principal exports: Rubber, tin, tapioca, spices, etc.
- STEEL BROS. & CO., LTD. Head office address, 6 Fenchurch avenue, London, E. C. 3. Branch office addresses, Rangoon, Bangkok, Moulmein, Bassein, Akyab. Telegraphic address, Steel. Codes used: Bentley's, A. B. C. Principal exports: Rice.
- GEORGE WILLS & SOMS, LTD. Head office, 3 Chapel street, London. Branch offices, San Francisco and Portland. Established, 1913. Telegraphic address, Willsons. Codes used: Bentley's, A. B. C., Western Union. Principal imports: Australian and Oriental products of all descriptions, both produce and manufactured goods. Principal exports, iron and steel products; oils, refined and crude; canned goods, food products and general merchandise.

## LOS ANGELES, CALIFORNIA, U. S. A.

- THE BRAUN CORPORATION, 363 New High street. Established, 1909. Telegraphic address, Braundrug. Codes used: Western Union, Lieber's, Standard, A. B. C. 5th edition. Principal imports: Scientific apparatus and chemicals. Principal exports: Laboratory machinery.
- FULGRUM & COMPANY, 742 San Pedro street, Los Angeles. Established 1907. Telegraphic address, Francolos. Codes used: A. B. C. 5th. Principal imports: Duck feathers, goose feathers, hair nets, pongee silks, essential oils, cocoa beans, vanilla beans, drugs, chemicals.
- HAMILTON & HENDERSON, 633 Central building. Established 1906. Telegraphic address, Hamilton. Codes used: Armsby, Robinson, Griffin and Skeeley, California Fruit Canners' Association and A. B. C. 5th Edition. Principal imports: Honey, beeswax. Principal exports: Honey, dried beans, canned tuna, canned sardines
- S. I. EREIDER, 382 Pacific Electric building, Los Angeles, California. Established 1916. Foreign freight traffic exclusively. Purchaser for foreign buyers. C. I. F. quotations. General export manager. Agent, Marine Department of The Liverpool & London & Globe Insurance Company, Ltd. Steamship agencies. Courtesy, promptness and satisfaction is the endeavor. Cable, Kreider. All codes.
- U. S. ELECTRICAL MPG. CO., 300 S. Canal avenue, Los Angeles, California. Bank references: Farmers & Merchants National Bank, 401 S. Main street, Los Angeles, Cal. Established, 1906. Exporters of electric motors from ¼ to 100 H. P.
- VIGNOLO-GIACOMINO CO., 177 N. Spring street. Established 1909. Telegraphic address, Vigia. Codes used: A. B. C. 5th Edition. Principal imports: Olive oil, cheese, macaroni, chestnuts, sardines, stockfish.

- MEXICAN COMMERCIAL AND AGRICULTURAL CO., INC., 700-7-4 Delta building, Los Angeles, California. Cable address, "Mexicana." Branch offices: San Diego, California, and Ensenada, Mexico. Customs brokers, steamship agents, factory representatives and exporters and importers.
- OAKLEY FAIRT MPG. CO., 1615-1517 Naud near North Main, Los Angeles, California. Principal imports: None. Principal exports: Concrete paint for outside walls, concrete floor paints, concrete waterproofing, concrete enamel, gloss enamel white, "Por-cel-white" high grade enamel, enamel undercoat, flat wall paint, "Pro-cel-kote" gloss wall paint, "Wall-seal-first" coater for plaster. High grade house paints, non-fading shingle stain, gray shingle stain, roof paint, floor paint, pure colors in oil, floor wax, government marine paints, marine enamel, marine varnish, engine enamels and filler, galvanized iron paints, special paints for any purpose, house varnishes, rubbed finish varnish (flat), inside spar varnishe, floor varnishe, varnish first coater, factory varnishes, dippling varnishes, wagon varnishes, special varnishes (for special purposes), liquid wood filler, asphaltums, gloss oil, Japans.

## MALACCA, STRAITS SETTLEMENTS

SIME DARBY & CO., LTD., Malacca, Straits Settlements.
Branch office addresses, Singapore, Penang, S. S.;
Seremban, F. M. S.; Muar, Johore and London. Telegraphic address. "Simit." Codes used: Western Union, A. B. C. 5th Edition, Bentley's, Broomhalls, etc. Principal imports: All kinds of rough goods, paints, hardware, canned goods, beer, wines and spirits. Principal exports: Tropical produce, tin, tapicca, etc. Bank references: Hongkong and Shanghai Banking Corporation.

### MANILA. PHILIPPINE ISLANDS

- BABCOOK & TEMPLETOM, INC. Head office address, Lack & Davis building, Manila, Philippines. Branch office address, 802 Postal Telegraph building, San Francisco. Established 1911. Telegraphic address, Babtemp. Codes used: A. B. C. 5th, Western Union, Bentley's. Principal imports: Hemp, copra, cocoanut oil, miscellaneous products from Philippines. Principal exports: Inks, lithographing varnishes.
- 8. M. BERGER COMPANY, 175-177 Juan Luna, Manila, P. I. Established 1900. Telegraphic address, Berco. Codes used, Bentley's, Western Union, A. B. C. 5th and Improved, Lieber's, Century and private. Principal imports: Merchandise of every description. Principal exports: Philippine products.
- CAMPOS BUEDA & CO., Muelle Industria 1051-1053, Manila P. I. Telegraphic address, Rueda. Codes used: A. B. C, 5th Edition, Lieber's Standard. Principal imports: Groceries, liquors, rubber tires, beans. Principal exports: Sugar, copra, hemp, chocolate. Bank references: International Banking Corporation; Philippine National Bank.
- DY POGO. Established 1914. Head office, 941 Jaboneros, Manila, Philippine Islands. Telegraphic address, "Dypoco." Codes used: A. B. C. 5th and Bentley's. Importers of general merchandise.
- ERLANGER & GALINGER, INC. Head office, Roxas building, Manila. Branch office, 11 Broadway, New York City. Established 1900. Telegraphic address, Erlgalinc. Codes used: Western Union, A. B. C. 5th Edition, Excelsior. Principal imports: Automobiles, tires, autoaccessories, Victoria talking machines and records, adding machines, cash registers, safes, filing furniture, marine and stationary engines, sporting goods, telephones and accessories, bicycles and motorcycles, mimeographs.
- EXCHANGE SECE CO., INC., 320 Amadeo street, Paco, Manila, P. I. Established 1908. Telegraphic address, Exchange. Codes used: Bentley's. Principal imports: Leather of all kinds, upper and sole, shoe hooks and eyelets, shoe threads and all kinds of shoe accessories. Principal exports: Leather, upper and sole and all kinds of men's Goodyear Welt shoes.
- JOHN M. GEJECE. Head office, Street Nueva No. 333, 335, 337, Manila, P. I. Branch office addresses, Singapore, Kobe, Hongkong, Amoy. Established 1833. Telegraphic address, Gejece. Codes used: International, English, and following the regulation of the United States of America. Principal imports Cotton textiles, flours, cans, meats, china, earthenware, glassware, cotton goods, and general merchandise, coffee, cocoa, tapioca, etc. Principal exports: Sugar, and the Philippines products, as shells, etc. Bank references: Chartered Bank, National Bank, Hongkong Bank. Ge Lingee, Ge Chai Lai, is manager of the firm.





# Camden Forgi

Coming Through our shops we can see all types and sizes of forgings. Some are smooth forged, some rough turned and some finished complete. We call them all

If you could but see this variety and could but know of our product and of us, there would surely come a time when you would say "Send Camden that forging inquiry"

High and Low Carbon Bars
Press Columns and Rams
Press Columns and Rams
Pull Back Cylinders
Water Cylinders
Vaire Bodies
Plungers
Weldless Steel Rings
Lathe Spindles, solid and hollow
bored
Long Feed Screws
Power Press Crank Shafts
Rudder Arms

Rudder Stocks
Cam Shafts
Eccentric Shafts
Crusher Shafts
Gear and Pinion Blanks

Bending
Feed
Straightening
Embossing Wrenches Large Wrene Saw Arbors

**BUYERS' MEMO** Locomotive

Side and Main Rods
Crank Pins
Axles
Rod Straps
Guides
Parts of frame both
in iron and steel
Iron Bars for Locoepairs in iron and steel
Hammered Iron Bars for Locomotive repairs
Marine Shaft
Marine Connecting and Eccentric
Rods

Steam Engine Forgings
Pump Crank Shafts
Pump Connecting Rods
Large Nuts
Turbine Shafts
Mill Shafting
Trolley Car Axles
Electric Motor Axles
Any forging to your print, and
specifications, in either iron or
steel

AMDEN FORGE CO. CAMDEN, N.J., U.S.A.

- OTTO GMUR, IMC., Dasmarinas 120 Manila, P. I. Established 1918. Telegraphic address, "Rolfotto." Importers of textiles, preserves, hardware, soaps, etc. Exporters of cigars, knotted hemp.
- PACONDRAY & CO., INC., No. 11 Plaza Moraga, Manila, P. I. Telegraphic address, Macondray. Codes used: A. B. C. 5th, Bentley's, Western Union, Lieber's, Scott's, Century. Principal imports: Flour, coal, grain, feed, sundry articles.
- Moleon & Co., INC. Head office, Chaco building, Manila, P. I. Branch office, Cebu, P. I. Established 1870. Telegraphic address, Macleod. Codes used: A. B. C. 5th Edition, Bentley's. Principal exports: Hemp, maguey.
- MORTON & HARRISON CO. Head office, Kneedler building, Manila, P. I. Branch office, 311 California street, San Francisco. Established 1910. Telegraphic address, Hoopton. Codes used: Western Union, Bentley's, A. B. C. 5th Edition, Excelsior and private. Principal imports: Lumber, paints and oils, roofing, tiles, hardware, etc.
- MALTER E. OLSEN & CO., IMC. Head office, 27 Escolta, Manila, P. I. Telegraphic address, Klosko. Branch office, 6-A Kiangse Road, Shanghai. Cable address, Neslo. Established 1904. Codes used: A. B. C. 5th Edition, A. B. C. 5th Edition improved, Western Union and Bentley's. Principal imports: Cigarettes, tobacco, smokers' novelties. Principal exports: Philippine cigars and cigarettes.
- PACIFIC COMMERCIAL CO. Head office, Manila, P. I. Branch offices, Iloilo, Cebu, San Francisco, New York, Seattle, Kobe, Japan; Sydney, N. S. W. Established 1898. Telegraphic address, Pacomeco. Codes used: Bentley's, Western Union, A. B. C. 4th and 5th Editions, Lieber's, private, A-1, Excelsior, Armsby, general telegraph, New Business. Principal imports: Oils, peanuts, rice, copra, hemp, sugar, hats, buttons, lumber, taploca, kapoc, beans, hair nets, gum damar, tallow. Principal exports: Alfalfa, apples, asphaltum, butter, beans, barley, canned fruit and vegetables, canned salmon, canned milk, dried fruits, flour, frozen fish, hay, hops, lard, lard compound, malt, nuts, oranges, oats, onions, potatoes, raisins, ripe olives, salt, tallow, lumber, lemons.
- PRILIPPINE PIBER AND PRODUCE CO., 16 Plaza Moraga, Manila, P. I. Established 1916. Telegraphic address, Filifiber, Manila. Codes used: A. B. C. 5th Edition, Bentley's, Western Union, Excelsior. Principal imports from the United States: Machinery, foodstuffs, general merchandise. Principal exports from Philippine Islands: Hemp. copra, cocoanut oil, lumbang oil, tobacco and cigars. Branch office address, 903 Kohl building, San Francisco, California. Bank references: Philippine National Bank, Bank of Philippine Islands.
- Telegraphic address, Vedgoll. Principal imports: cocoanut oil. Branch office addresses, 11 Broadway, N. Y.; 608 Life Bldg., San Francisco, Calif., and Tacoma, Wash.
- Cruz, Manila, P. I. Established 1911. Telegraphic address, Springerco. Codes used: Western Union, A. B. C.. Lieber's and Bentley's. Principal imports: Hardware, paints, rubber goods, plumbing and sanitary appliances. Bank references: International Banking Corporation.
- STANDARD IMPORT CO., INC., 177 Juan Luna, Manila. Established 1913. Cable address, Vidabo. Codes used: A. B. C. 5th Edition, Western Union and Bentley's. Bank references: Bank of the Philippine Islands. Importers of hardware, steel, paints, oils, notions, textiles, haberdashery, fancy goods, hosiery, silk, clothing, belting, machinery supplies.
- TAN SENGUAN & CO. Established 1913. Head office address, Muelle de Binende No. 157, Manila, P. I. Branch office address, Rice Mill at the province of Baliuag (Bulacan), Philippine Islands. Telegraphic address, "Tan Senguan & Co." Codes used: 5th Edition, A. B. C. Bank references: Philippine National Bank, Bank of the Philippine Islands, International Banking Corporation, Chartered Bank of India, Australia and China; Hongkong, Shanghai Banking Corporation. Importers of rice and other similar products. Exporters of sugar in green, not refined.
- E. VIEGELMANN & CO., INC., No. 90 Calle Rosario, Manila, P. I. Established 1903. Telegraphic address, Viegelmann. Codes used: Western Union, Bentley's, A. B. C. 5th Edition. Branch office address, No. 17 Calle Santo Nino, Iloilo, Panay, P. I.; No. 377 Fourth avenue, New York City. Importers of cotton piece goods and sundries. Exporters of Philippine handmade embroidered goods, buttons. Bank references: Philippine National Bank, Manila and New York; Bank of the Philippine Islands, Manila.

- UNITED STATES SHOE COMPANY, 286 Sab Marcilino, Manila. Established 1899. Telegraphic address, Shoemack. Codes used: Western Union and A-1. Principal imports: Leather sole and upper, ducks, canvas, cotton shoe linings, shoe findings, paper for printing and box-making. Principal exports: Shoes, shoe findings, shoe leather.
- WISE & CO., LTD. Head office, 158 Suan Luna, Manila.
  Branches: 8 Gore street, Manchester, England, and
  Iloilo, P. I. Established 1832. Telegraphic address,
  Sapiers. Codes used: A. B. C., A-1, Bentiley's, Lieber's,
  Western Union, Scott's and private. Principal imports:
  Piece goods, hardware, provisions, paper, films, soaps
  and perfumes, stationery, haberdashery, notions. Principal exports: Tobacco, cigars, native embroidery.

### MAZATLAN, SIN., MEXICO

- CARLOS FRITSCH Y CIA. Established 1916. Codes used:
  A. B. C. 5th Edition. Principal imports: Groceries, hardware, lumber, notions, electrical supplies, Japanese and Chinese goods. Principal exports: Hides, castor beans.
- VICTOR PATRON. Head office, P. O. B. 105, Masatlan. Sinaloa, Mexico. Established 1912. Branch office, 112 Market street, San Francisco. Telegraphic address, Patron. Codes used, Lieber's, A. B. C. 4th and 5th Editions. Samper (Spanish). Principal exports: Mexican dried shrimps, Mexico Sisal, fresh tomatoes, fresh and salted and dry salted hides, garbanzos (chick peas) and all products of the coast of Mexico. Principal imports: Foodstuffs, hardware, machinery, paper, sodium, cyanide, perforated zinc sheets, calcium carbide, lead acetate and all articles needed by general merchandise stores and mining companies in Mexico.

### MEDAN DELI, SUMATRA, EAST COAST

- CHONG LEE & CO. Established 1890. Telegraphic address, Chonglee. Codes used: A. B. C. 5th Edition. Wholesale and retail provision merchants. Commission agents. Indentors of every article suitable for Chinese market. Carry extensive business in cotton piece goods.
- MEDAMSCHE HANDEL MAATSCHAPFIJ, Spoorstraah 2.
  Medan. Branch office address, Sandjong-Jsera, Sumatra.
  Established 1896. Telegraphic address, Soeberg. Codes
  used: A. B. C. 5th. Principal imports: Foodstuffs,
  wines, liquors, spirits, all kinds of haberdasheries,
  glassware, hardware, enamelware, farming and estates
  requisites and implements, piece goods. Principal exports: Rubber, coffee, tobacco, patchouli, kapok, all
  Sumatra products.

### MELBOURNE, AUSTRALIA

- W. AEGLISS & CO., PTY. LTD. Head office, 42 Bourke street, Melbourne. Branch offices, 176 Hereford street, Christchurch, New Zealand; 17 Castlereagh street, Sydney, Australia. Established 1886. Telegraphic address, Imperial. Codes used: A. B. C., A-1, Lieber's, Western Union and private. Principal imports: Tin plate, stockinette, hoop iron. Principal exports: Frozen meats, preserved meats, tallow, premier jus, skins, wool, pelts, bones and manures.
- C. M. BROOKE & SOMS. Head office, Whiteman street, South Melbourne. Branch office, 70 Bree street, Capetown. Established 1904. Telegraphic address, Squash. Codes used, A. B. C. 5th Edition. Principal imports: Coffee, beans, straw envelopes, citric acid, essences, oil of lemon, essence and other small bottles, lemon skins in brine. Principal exports: "Lemos" lemon squash, Lemeese lemon cheese, coffee essence, lemon peel, lime and raspberry cordials, etc.
- BROWN & DURRAU, LTD. Establishd 1886. Head office, Flanders street, Melbourne. Branch office, West Australia, Perth, also at Fremantle, West Australia; Sydney, N. S. W. Telegraphic address, "Agent." All public codes used. Bank references: Royal Bank of Melbourne and Bank of Australia, Perth. Importers of hardware, fencing wire, textiles, timber, kapok, canned salmon, fertilizers, corks, etc. Exporters of wheat, flour, hardwood, cattle, frozen meats, wool, hides, dairy products, etc.
- BUCKLEY & MUMM, LTD. Head office, 300-310 Bourke street, Melbourne. Branch office. 19 Chiswell street, Finsbury, London, E. C. I. Established 1854. Telegraphic address, Drapery. Codes used: A. B. C. 5th Edition. Principal imports: Soft goods of all kinds, furnishings, furniture, carpets, fancy goods, plated

Cable Address: "Swisscol"

Lieber's, Western Union Codes used

# AMERICAN ANILINE PRODUCTS, INC.

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# ANILINE COLORS

Banking reference: International Banking Corporation

Specialties:

Amanil (Direct) Colors

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Amanil Sky Blue-for silk or cotton.

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Equal in every respect to the German products, for dyeing and printing:

Silk, Halfsilk, Woolsilk, Cotton, Wool, Halfwool, Artificial Silk, Hats (soft and stiff), Ramie, Jute, Leather, Straw, Feathers, etc. Also for Writing Inks, Printing Inks, Varnishes, Furniture Stains, Shoe Dressing, etc.

Special Facilities For Export

Samples On Request

Correspondence In Ali Languages

- J. BOSISTO & CO., FTY. LTD., 62 Erin street, Richmond, Melbourne, Australia. Established 1855. Principal export: Eucalyptus oil. Bank references: Royal Bank, Melbourne.
- E. B. CARTER & CO., 493-5 Collins street, Melbourne, Australia. Established 1887. Telegraphic address, Montalto. Codes used: A. B. C. 5th and improved Editions, Bentley's, Western Union, A-1 Telegraph code, Riverside 1901 Editions. Importers of fish, seeds, bark, cotton, grain. Exporters of cereals. Bank references: Colonial Bank of Australia, Ltd.
- J. CHALEYER & CO., 510-514 Collins St., Melbourne, Australia. Established 1889. Telegraphic address, "Chaleyer," Melbourne. Codes used: A. B. C. 4th and 5th, Lieber's, Western Union. Principal imports: Cream of tartar, tartaric acid, sulphide of sodium, clocks, silverware, celluloid goods, axe handles, shade rollers, silks, cotton piece goods, hostery, underwear, etc. Bank references: Royal Bank of Australia, Ltd., 18 Bishops Gate, London, E. C.; Comptoir National d'Escompte de Paris, Paris and London.
- Queen street, Melbourne, Australia. Branch office address, 262
  Queen street, Melbourne, Australia. Branch office addresses, Sturt St. Ballarat, Australia; Lloyds Avenue, London. Established 1850. Telegraphic address, Simplex. Codes used: A. B. C. 5th, Bentley's, Premier. Principal imports: Metals, woodenware, general hardware. Principal exports: Metals mined in Australia, rabbit skins, wool, scrap metal.
- DUDPIELD'S PROPTY., LTD. Head office, 19 McKillop street, Melbourne. Branch offices, Sydney, Adelaide, Perth and New Zealand. Established 1903, Telegraphic address, Dudfields. Codes used: A. B. C., Lieber's, Western Union. Principal imports: Buttons, cotton underwear, hosiery, gloves, cotton piece goods.
- BOBERF HABPER & CO., LTD., Flinders Lane, Melbourne, Australia. Cable address, "Harper." Codes used: Bentley's, A. B. C., Western Union, A-1. Branch offices at Sydney, Brisbane, Adelaide, Fremantle. Bank references: Bank of Australasia.
- HARRISON, RAMSAY, PTY., LTD. Head office address, 666 Bourke street, Melbourne, Australia. Branch office addresses, 40-42 Clarence street, Sydney: 29 Gresham street, Adelaide; Municipal Buildings Wellington, Auckland, Dunedin, Christchurch, Brisbane, London, E. C. Telegraphic address, Yasmai. Codes used: A. B. C. 5th Edition, A-1, Bentley's, Watkins, private. Principal imports: Tea, rubber, produce, general merchandise. Principal exports: All Australian products.
- JAMES RENTY & CO., 95 Williams street, Melbourne, Australia. Established 1840. Telegraphic address, Henty. Codes used: A. B. C., private. Branch office address, London, Kobe and Sydney. Principal imports: Hardware, jute, tea, chemicals, groceries. Bank references: Bank of Australia.
- SWALLOW & ARTELL, LTD., Stoke street, Melbourne, Australia. Established 1858. Telegraphic address, Swallow—Port Melbourne. Codes used: A-1, A. B. C. 4th and 5th, Western Union, Liebers, Bentley's and private. Principal imports: Tin plates, hoop iron, tartaric acid, thin sheet iron, cream of tartar. Principal exports: Biscuits, plum puddings, canned fruits, cakes, honey, jams, canned and compressed vegetables.
- PRED WALKER & COMPANY, 376 Flinders street, Melbourne, Australia. Cable address, "Perge." Codes used: A. B. C. 5th Edition, A-1. Branch office in Sydney, Australia. Bankers: Colonial Bank of Australasia. Exporters of all Australian produce. Desire to get American produce.

### MILAN, ITALY

SOCIETA COMMISSIONARIA ORIENTALE, via S. Paolo 22, Milan, Italy. Established 1910. Telegraphic address, Oceanic. Codes used: A. B. C. 5th Edition, A-1 Economical. Branch office addresses: Societa Commissionaria Orientale, Singapore; Penang; Batavia; Semarang; Soerabaia. Principal exports: Textiles, yarns, sundry articles, hardware. Bank references: Banca Commerciale Italiana, Milan, London, New York; The National City Bank of New York.

## MINNEAPOLIS, MINN., U. S. A.

W. P. DEVEREAUX CO. Head office address, 1016 Chamber of Commerce, Minneapolis, Minn. Branch office addresses: Lewistown, Mont.; Bozeman, Mont. Code used: Robinson. Principal import: Flax. Principal export: Oats.

## MONTREAL, CANADA

- THE CHARLES CICEBO CO., LTD., 84-86 St. Peter street, Montreal, Canada. Established 1897. Cable address, "Ciceri." Code used: A. B. C. 5th Edition, Gallesi. Bank references: The Merchants Bank of Canada, Montreal. Imports: Italian products, principally food-
- PRANCIS HAMKINS & CO., LTD., 201 Coristine Bldg..
  Montreal, Canada. Established 1904. Cable address,
  "Franik." Codes used: A. B. C. 4th and 5th Editions,
  Bentley's, Lieber's, Western Union. Bank references:
  Canadian Bank of Commerce, Montreal, Canada. Imports: Iron, steel and metals. Exports: Steel billets,
  wire rods, rails, bars, shapes, plates, sheets, hoops, tinplates, alloy steels, tubing, pig-iron, cast iron pipe, wire
  of all kinds, nails and all classes of wire products. Steel
  pipe, water filtration plants and garbage disposal apparatus.
- C. B. EART, BEG., 489 St. Paul street, West Montreal, P. Q. Established 1900. Cable address, "Chart." Codes used: Armsbys and A. B. C. 5th Edition. Bank references: Bank of Toronto, Montreal, P. Q. Imports: Canned goods, dried fruits, produce, nuts, oils, heavy chemicals, grocery specialties and other lines reaching the wholesale grocery trade.
- Established 1919. Bank references: Royal Bank of Canada, Montreal, Canada. Imports: Tin and antimony, wool, silks, coffee, hides, oils, gums, tallow, vegetable wax, hemp, jute, camphor slabs. Exports: Iron and steel products, copper and brass, lead and spelter, tin plate, asbestos products, power plant equipment, railway supplies, electrical supplies, machinery and hardware, cotton, paints.
- MARITIME FISH CORP., LTD., St. Nicholas Bldg., Montreal. Canada. Established 1885. Cable address, "Martimfish." Codes used: A. B. C. 5th Edition. Branches. Digby, Nova Scotia; Canso, Nova Scotia, Canada. Bank references: Union Bank of Canada, Montreal. Exports: Canned fish, liquid fish glue, dried codfish, haddock, hake cusk and pollock.
- J. W. MILLS & SON, 43 St. Sacrament street, Montreal. Canada. Established 1895. All codes used. Cable address, "Winmills," Bank references: Canadian Bank of Commerce, Montreal, Canada. Customs brokers, shipping and forwarding agents.
- MILTON HERSEY CO., LTD., 84 St. Antoine street, Montreal, Canada. Established 1894. Cable address, "Milhersey," Codes used: Bedford, McNeil and Western Union. Branches, 257 Portage avenue, Winnipeg, Canada. Bank references: Bank of Nova Scotia. Industrial and analytical chemists, consulting engineers and inspectors.
- RIORDON FULP & PAPER CO., LTD. Beaver Hall Square, Montreal, Canada. Established 1865. Cable address, "Riordon." Code used: A. B. C. 5th Edition. Branches: Hawkesbury, Ont.; Merritton, Ont.; Klpawa. Que.; Calumet, Que.; L'Annonciation, Que.; Boule, Que. Bank references: Imperial Bank of Canada, Montreal. Canada. Imports: Coal, sulphur. Exports: Bleached sulphite fibre woodpulp, caustic soda, spruce lumber, railway ties, shingles, sulphite waste liquor condensed.
- Canada. Established 1918. Cable address, "Robandson." Codes used: Liebers, Bentley's, A. B. C. 5th Edition. Bank references: Merchants Bank of Canada, Montreal. Imports: Sugar, beans, peas, oils, nuts, dried fruits, rice, cocoa, beans, spices, coffee, tapicca, jams. Exports: Flour, oats, canned vegetables, canned fruits, fish, meats, cereals.
- ROSE & LA FLAMME, LTD., St. Paul street, Montreal.
  Canada. Established 1894. Cable address, "Lafrose."
  Codes used: A. B. C. 5th Edition, Liebers, Scattergoods
  and Western Union. Branches: Toronto, Ontario,
  Canada. Bank references: Bank of Montreal, Montreal,
  Canada. Imports: Grocers' specialties, food products,
  extracts, essential oils.
- sino-worth american co., Ltd., Power Bidg., Montreal, Canada. Established 1918. Cable address, "Sinam." All codes used. Branches: New York, San Francisco, Vancouver. Bank references: Royal Bank of Canada, Montreal, Canada. Imports: All products of China, Japan, India and the Far East. Exports: Cotton goods, textiles, carbide, steel, typewriters, harvesting machinery, flour, paints and varnishes, bridges and structural steel, enamelry, galvanized and tinware and boilers, radiators and grates, builders' and general hardware, fire engines, road-making and sawmill machinery.



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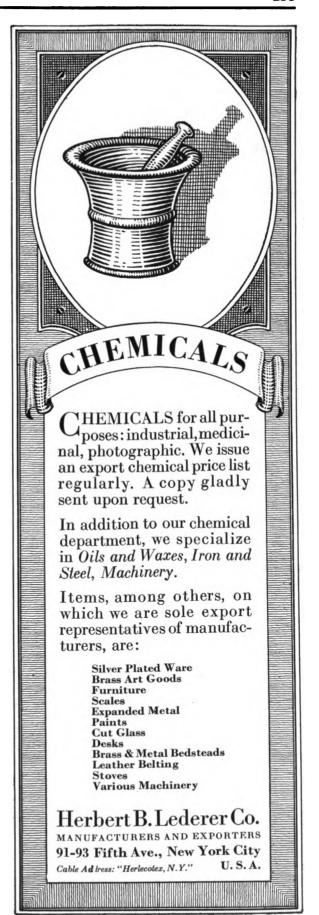
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Hosiery and
Underwear

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U. S. A.

Cable Address: "Herlecotex, N.Y."



WOODS MANUFACTURING CO., LTD., 800 Mullen street, Montreal, Canada. Established 1903. Branches: Ottawa, Toronto, Winnipeg and Welland. Imports: Jute, cotton, wool. Exports: Cotton duck, bag cloths, seamless bags, tents, canvas goods, elderdown sleeping robes, mackinaw clothing, working men's clothing, shirts, sweaters and jumpers, blankets, etc.

## MOSCOW, RUSSIA

THE ALL-BUSSIAN CENTRAL UNION OP CO-OP-ERATIVE SOCIETIES, Moscow, Russia. Established 1898. Cable address, "Centrsolus." Branch in San Francisco, Cal., 167 Post St. Bank references, Crocker National, San Francisco. Imports: Machinery, equipment, hardware, foodstuffs, clothing. Exports: Furs.

### NAGASAKI, JAPAN

ECLME, RINGER & CO., 7 Oura, Nagasaki, head office. Branch offices, Shimonoseki and Fusan, Korea (Chosen). Established 1868. Telegraphic address, Ringer. Codes used. A-1, A. B. C. 4th and 5th editions, Scott's 6th, 9th and 10th Editions, Watkin's, Western Union, Lieber's, Bentley's, Standard Shipping Code, etc. Principal imports, iron and steel bars, sheets, plates, angles, etc.; steel rails and accessories, wire nails, horse shoe nails, galvanized wire and sheets; tinplates, zinc sheets, flour, sugar, rice, window glass, putty, piece goods, woolen goods, etc. Principal exports, coal, graphite, vegetable wax, matches, talcum powder, porcelain insulators and rubber cups, etc.

#### **NELSON. NEW ZEALAND**

8. KIRKPATRICK & CO., LTD., Nelson, New Zealand. Established 1881. Telegraphic adress, Manifesto. Codes used, A-1, A. B. C. 5th, Western Union, 5-letter edition. Principal imports: Tin plates, glass jars, spices. Principal exports: Jam.

## NEWCASTLE, N. S. W., AUSTRALIA

CALEDONIAN COLLIERIES, LTD. Head office address, Watt Street, Newcastle. Established 1913. Telegraphic address, Caledonian. Codes used, Scott's 10th, Bentley's, A. B C. 5th, A-1 and Western Union. Principal imports: Colliery stores. Principal exports: Coal from Company's Collieries, Aberdare, W. Wallsend and Waratah. Branch offices at Sydney, Melbourne, Adelaide, Fremantle, Port Pirie, Brisbane, Maryborough, Rockhampton, Mackay, Townsville, Cairns.

## NEW ORLEANS, LA., U. S. A.

**POWLER & BLACK**, 204 Metropolitan Bank building. Telegraphic address, Blackfowl. Codes used, A. B. C. 5th improved. Principal imports: Beans, pepper, bird seed.

## NEW YORK, U. S. A.

- ABOY & M. HERRANDES COMPANY, INC. Head office, address, 11 Broadway, New York, N. Y. Branch office address, Gereke & Co., Ltd., Soerabaia, Java. Established 1916. Telegraphic address, Hernandico. Codes used, Lieber's, A. B. C., Western Union. Principal imports: Sugar, coffee, rice, hides. Principal exports: Sugar machinery, agricultural machinery, machine tools, electrical equipment Bank references: National City Bank. International
- ALLIED COMMERCE CORPORATION, 501 Fifth Ave., New York, N. Y. Established, 1918. Telegraphic address, Alcomco, New York. Codes used, A. B. C. 5th Edition, Bentley's. Importers of silks and Japanese products. Exporters of iron and steel products, machinery of all descriptions, electrical supplies, drugs, chemicals, oils, paints. Bank references, Central Union Trust Co., New York, N. Y.
- WERICAN BURBAU OF FORBIGH TRADE, INC., 21
  West 38th street. Established 1915. Telegraphic address, Nomerexpo. Codes used, all. Principal imports:
  Pharmaceutical products, colonial produce, dry goods,
  pearls, etc. Principal exports: American products.

- THE AMERICAN TOBACCO CO., 111 5th Ave., New York City. Established 1904. Cable address, "Powhattan." Codes used, A. B. C. 5th Edition, Broomhall, Western Union. Bank references, Hanover National, National City, National Bank of Commerce. Exporters of cigarettes, smoking tobacco, plug tobacco.
- AMERICAN STEEL EXPORT CO., Woolworth Bldg., New York City, Established 1915. Cable address, "American Steel Export." Codes used, private A-1. Lieber's, Bentley's, A. B. C. 4th, 5th and 5th improved, Western Union, Universal, W. U. 5 letter, Commercial 5 letter, Voller's condenser. Branch offices, Smith Building, Seattle, Wash. Bank references, Irving National Bank, New York City, Duns and Bradstreets. Exporters of steel and iron goods and machinery.
- G. AMSINCE & CO, INC., 90-96 Wall street, New York, N. Y. Branch office address, 260 California street, San Francisco., Calif. P. O. Box 474, New Orleans, La., Mexico City, Mexico. Established 1859. Telegraphic address, "Amsinck." All standard codes used. General importers and exporters.
- ARON & COMPANY, INC. Head office address, 95 Wall street, New York, N. Y. Branch offices, 538 Merchants Exchange, San Francisco; 416 Poydras, New Orleans. Established 1901. Telegraphic address, Aron Company. Codes used, Lieber's, A. B. C., Bentley's, Western Union, Private. Principal imports: Raw products. Principal exports: All American products. Bank references: Anglo and London Paris National.
- THE BAILEY DRAKE COMPARY, 149 New Montgomery street, San Francisco, Calif. Telegraphic address, "Badra." Codes used, Western Union, A. B C. 5th Edition. Principal imports: None. Principal exports: Automobile supplies, iron articles, engines, chemicals. Bank references: Anglo and London Paris National Bank of San Francisco.
- BEAVER INDUSTRIAL CORP., 90 West St., New York City. Established 1918. Bank references: Coal and Iron National Bank. Principal imports: Steel bars, rails. sheets, boiler tubes, plates, angles, beams, sheets, tin plate, wire nails, wire rope, galvanized and industrial chemicals. Principal exports: Color oil, waxes.
- BERNARD, JUDAE & COMPANY. Head office, 10-12
  Broadway, New York City. Branches, Philadelphia,
  Pittsburgh, Chicago, San Francisco, Seattle and Paris.
  Ocean freight contractors, specialists in export shipping, financing and insurance. Get our rates and increase your business. Try our service and your goods
  will be there ahead of your competitors.
- BOWEING & COMPARY.. Head office address, 17 Battery Place, New York City; branch office addresses, London, England; Newfoundland, N. S.; Liverpool, England. Established 1868. Telegraphic address, Bowring, New York. Codes used, Western Union, A. B. C. 5th edition improved, Bentley's. Principal imports: Castor beans, beans and peas, cocoanut oil, pig tin, hemp. ores, hides and skins, beeswax, carnauba wax, cocoa, copra, soya bean oil, wool, bristles. Principal exports: All American products and manufactures.
- BREWHER & COMPANY. Head office, 258 Broadway, New York, N. Y. Branch office, Hamilton, Bermuda. Established 1915. Telegraphic address, Chembren, New York. Codes used, A. B. C. 4th and 5th editions, Western Union. Principal imports: Drugs, chemicals. Principal exports: Drugs, chemicals. Bank references: Public National Bank of New York.
- B. BROWN, INC., 237 Water St, New York, N. Y. Established, 1914. Telegraphic address, Brochem. Codes used, A. B. C. and Bentley's. Principal imports: Camphor, Japan wax, olive oil, menthol, sumac. Principal exports: Chemicals, dyes, drugs, oils, waxes, paper, iron, steel and all other American products. Bank references: Chatham & Phenix National Bank.
- V. CAIRO, INC., 11 Broadway, New York City, N. Y. Branch office addresses, all parts of the world. Established 1898. Principal imports: General, all lines. Principal exports: General, all lines.
- CAMACEO, BOLDAN & VAN SICKEL, 56-58 Pine street.
  Established 1875. Telegraphic address, Camacho.
  Codes used, A. B. C., Western Union, Bentley's, Lieber's.
  Principal imports: Coffee, hides, skins, rubber, cocoa.
  Principal exports: Machinery, railroad cars, locomotives,
  rails, etc., dry goods, general merchandise.
- JOHN CAMPBELL & CO., 75 Hudson, New York, N. Y.
  Established 1876. Telegraphic address, Mycellium.
  Codes used, A. B. C., Bentley's and Western Union.
  Principal imports: None. Principal exports: Camel
  dyes, aniline colors, and coal tar products of our own
  manufacture. Are sole selling agents for American
  manufacturers of various chemicals, dyewood extracts
  and other products. Bank references: Any London or
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U. S. A.

- CARACANDA BROS., 1 Wall St., New York, N. Y. Established 1872. Telegraphic address, Caracanda. Codes used, A. B. C. 5th Edition, Lieber's, Private Codes. Principal imports: Coffee, skins, copra, gum. Principal exports: Cotton goods, foodstuffs, general merchandise. Bank references: Equitable Trust Co., Mechanics & Metals National Bank, Battery Park National Bank.
- CARBON SUPPLY COMPANY. Head office address, Woolworth Building, New York City, N. Y. Branch office address, 821 Merchants Exchange Building. Cable address, Ascher. Principal imports: Iron, steel and chemicals. Bank references: Wells Fargo Nevada National Bank.
- CARTER, MACY & CO., IMC., 140-142 Pearl St., New York City, N. Y. Branch offices in all principal cities of the U. S. Foreign buying stations in Shidzuoka, Yokkalchi, Japan; Hankow and Shanghai, China; Taipeh, Formosa, Colombo, Ceylon; Batavia, Java; Calcutta, India. Importers and exporters of tea.
- THE CHACON TRADING COMPANY, 82-92 Beaver St., New York, N. Y. Branch office addresses, Caracas, Venezuela, Bogota, Colombia, Cuba, Porto Rico, Mexico, El Salvador, C. A. Established 1914. Telegraphic address, Rupermac. Codes used, Western Union, Lieber's, A. B. C. 5th edition. Principal imports: Fibers, dividivi, rubber, hides and skins, nuts, hair, panama hats, sugar, lumber, ivory nuts, beans, etc. Principal exports: General merchandise, rubber substitute, solidified alcohol heaters, druggists sundries, hardware, building materials, hydro-carbons, asphaltum and by-products, paints, varnish, lubricating oils, electrical appliances, motors, dynamos, etc., machinery, etc. Bank references: Corn Exchange Bank.
- CHIMA AND JAPAN TRADING CO., LTD., 80 Maiden Lane, New York, N. Y. Branch office addresses, 42 Kiangse Road, Shanghai, China; 80 Yamashita Cho, Yokohama, Japan; 88 Naka Machi, Kobe, Japan. Established 1878. Telegraphic address, "Fogg," New York. Codes used, Bentley's, Lieber's, A. B. C 5th edition Principal imports: Raw silk. Principal exports: Iron and steel products, drugs and chemicals, cotton piece goods and general merchandise. Bank references: Hongkong and Shanghai Banking Corporation, National Park bank.
- A. G. DE SERBBININ & CO. Head Office address, 60
  Broadway, New York City. Branch office addresses, 2A
  Kiukiang Road, Shanghai, China; Lowman Building,
  Seattle, Wash.; Board of Trade Building, Vancouver,
  B. C. Established 1918. Telegraphic address, Andrew
  Sherbinin. Use all codes. Import general merchandise. Principal exports: Wire, nails, pulp, steel plates,
  hard steel bars, mild steel bars, gas tubes, boiler tubes,
  sheets, tin plates, structural shapes, rails, railway accessories, hoops, bamboo steel, wire rods, boilers,
  machinery.
- York City; Seattle, Tacoma, Portland, San Francisco, London. Importers, exporters, shipping commission, insurance; agents for Ocean S. S. Company, Ltd., China Mutual Steam Navigation Company, Ltd., Blue Funnel Line.
- THE DEY MILK COMPANY, 15 Park Row. New York City. Established 1901. Cable address, "Drimilk." Rank references, Hanover National Bank, National Park Bank of New York City. Principal exports: Dry or powdered milk, sugar of milk or milk sugar.
- E. L. DU FORT DE MEMOURS & CO., Wilmington, Delaware, U. S. A. Cable address, du Pont. Codes, Western Union, A. B. C. 5th edition. The world's largest manufacturers of explosives for industrial, sporting and military purposes. The location of extensive plants near the Atlantic and Pacific Coasts enables us to make prompt shipments and eliminates inland freight charges. Write us for prices, delivery information and descriptive booklets.
- EXPORT ENGINEERING CO.. Head office address, 95
  Liberty street, New York City; branch office addresses,
  A. P. Van Damm, 1 Yurakucho Itchome, Kojimachi-Ku,
  Tokyo, Japan; Sydney P. Smith, Apartado 5181, Mexico
  City. Established 1917. Telegraphic address: Zenkocha, New York. Codes used, Western Union, A. B.
  C. 5th edition. Principal imports: Metals, including
  antimony, tungsten, manganese, molybdenum. Principal exports: Fire protective apparatus, building materials, waterworks, sanitary equipment, motor trucks,
  hoisting machinery, machine tools.
- W. FORD & CO., INC. Head office, 149 Broadway, New York City, U. S. A. Established 1904. Cable address, Fordera, New York. Prepared to supply all requirements in iron and steel products, metals of all kinds, machinery and industrial equipment of all descriptions; lumber and building materials; operating in Australia, British India, China, Japan, Philippines, Dutch East Indies. C. I. F. prices supplied on receipt of complete specifications.

- A. B FARQUEAR COMPARY, LTD., Export office address, Cotton Exchange Building, New York, N. Y. Established 1856. Telegraphic address, Fenankle, New York. Codes used, A. B. C. 5th edition, Bentley's, Lieber's, Western Union. Principal imports: None. Principal exports: (Our own manufactures), plows, harrows, cultivators, grain drills, corn planters, corn shellers, potato diggers, grinding mills, steam engines and boilers, steam and gas tractors, saw mills, threshers, hydraulic presses for cider, wine, veneer, also special hot plate presses, etc. Bank references, National Park Bank, New York.
- PEARON, BROWN COMPANY, INC., 90-96 Wall St., New York, N. Y. Established 1876. Telegraphic address, Fearon, New York. Codes used, all public and private. Principal imports: All descriptions of Chinese and other Oriental produce, such as wool, bristles, hair, hides, etc., raw cotton, waste slik, spun slik, yarns and piece goods, metals, oils, hemp, jute, tallow, wax, etc. Principal exports: Machinery, railway and electrical supplies, piece goods, clothing, foodstuffs and general sundries. Branch office addresses, Fearon, Daniel & Co., Inc., of China; Shanghai, Tientsin, Hankow, Harbin, Peking. Bank references, the Guaranty Trust Company of New York.
- PTEGEL & CROSS, INCORPORATED. Head office address, 80 Wall Street, New York, N. Y. Branch office address, Representatives and agents in South America, Mexico, Cuba, Australia and New Zealand. Established 1918. Telegraphic address, Glossing, New York. Codes used, A. B. C. 5th, Lieber's, etc. Principal imports: General merchandise. Principal exports: Motor trucks, motor accessories, agricultural tractors, agricultural implements, mining wire cloth, flashlights, brass and copper ware. cooking utensils, hunting and sporting specialties, vacuum cleaners. Bank references: Importers and Traders National Bank, New York.
- FIRE-GUN MANUFACTURING COMPANY, INC., 115-119
  Fourth Avenue, New York, N. Y. Established 1917.
  Telegraphic address, Trenelec. Codes used: Western
  Union. Principal exports: Fire extinguishers and fire
  extinguisher fluid. Bank references, International Bank,
  17 Battery Place, New York, N. Y.
- PRAYAB & CO. Head office address, 50 Church street, New York City; branch office addresses, Sale & Fraxar, Ltd., Tokyo, Yokohama and Kobe; E. W. Fraxar, Peking, Tientsin; Cornabe, Eckford & Co., Dairen, South Manchuria; Leslie & Co., Perth, W. Australia. Established 1856. Telegraphic address, Fydama, New York. Codes used, A. 1, A. B. C. 5th edition, Lieber's, Western Union, Bentley's, Whitelaw's, Private. Principal imports: Heavy chemicals, hides and furs, metals, miscellaneous Japanese and Chinese products.
- B. FRENAN & CO., 90 Wall street, New York City. Established 1914. Telegraphic address, Fremrob, New York. Codes used, standard, Principal imports: Burlap, jute, gunnies, hides, skins, rubber, tin, spices, kapok, tapioca, sago, vegetable oils and copra. Principal exports: Chemical oils, drugs, dyes, saccharine, rosin, asphaltum, paints, etc., raw cotton, twist, yarns for hosiery and underwear manufacturing, leather belting, glazed kid (Chevreau) patent, chrome, buffed and artificial leather for all purposes; metals, electrical motors, wire, supplies and machinery, including cinematograph films and apparatus; general merchandise, etc.
- N. Y. Branch office addresses, 244 California St., San Francisco, Calif. Established 5 years. Telegraphic address, Konigsberg. Codes used, Bentley's, A. B. C. 5th edition, Scott's. Principal imports: Beans, rice, peanuts, food products, chemicals, silk, coffee, starch. Principal exports: Cotton machinery, wool, steel, chemicals. Bank references, Royal Bank of Canada, N. Y., National Park Bank, N. Y.
- CHAS. P. GARRIGUES CO., 80 Maiden Lane, New York, N. Y. Established 1375. Telegraphic address, Garrigues, New York. Codes used, A. B. C. 5th edition. Branch offices, 24 California St., San Francisco, Calif. Importers of vegetable oils, copra, spices, drugs, etc. Exporters of: Chemicals. Bank references, Chatham & Phenix National Bank, N. Y.; National City Bank, N. Y.; Wells Fargo Nevada National Bank, San Francisco, Calif.
- GASTON, WILLIAMS & WIGMONN, INC. Head office, 35-39 Broadway, New York. Branches in all parts of the world. International merchants, exporters, importers, shippers. World-wide distributing facilities are afforded American manufacturers and merchants. American business houses provided by us with excellent facilities for the systematic world-wide distribution of "Made-in-America" products. Foreign manufacturers and merchants can secure distribution of their products in the United States through our perfected importing facilities and efficient sales organization.



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- L. C. GILLESPIE & SONS, 6th & 8th Fletcher St., New York, N. Y. Established 1899. Telegraphic address, "Lycurgus." Codes used, A. B. C., Western Union, Lieber's. Principal imports: None. Principal exports: Heavy chemicals.
- City and at London, England. Founded 1837. Exporters of machinery, hardware, tools, motorcycles, crockery, tin plate, steel, chemicals, dyes, leather. Importers of copra, essential oils, cocoa, rubber, cocoanuts, spices. Correspondence solicited. Bankers National City Bank, New York.
- W. B. GRACE & COMPANY. Main office, Hanover Square, New York City. Exporters of all American products. Importers of all raw materials from South and Central America, Japan and the Far East, including wool, cotton, hides and skins. Large stocks of Oriental imports carried at Seattle and San Francisco.
- Cable address, Grantrail, New York. City. Cable address, Grantrail, New York. Codes used, Bentley's, A. B. C. 5th edition, Western Union. Sole sales agent Slatington Iron & Steel Co., Slatington, Pa. Principal exports: Tin plate, sheet steel, hoop and band steel, structural shapes, plates and bars, bolts, nuts, rivets, pipe tubing, alloy and tool steels and kindred steel products.
- J. E. GROSS CORPORATION. Head office address, 140
  Nassau Street, New York City. Branch office addresses, Porto Rico, Cuba, Mexico City, Guatemala, Ecuador. Established 1913. Telegraphic address, Eskimo. Codes used, A. B. C. 5th edition improved, Lieber's, Bentley's, private. Principal imports: Jute goods, fibres, yarns, wastes, textiles, canned sea food, canned meat, canned fruits, farm products, chemical products, minerals and all kinds of manufactured goods. Principal exports: Wastes, manufactured goods of all descriptions, Gilsonite and asphaltum, portable houses, building materials, asbestos, second-hand railroad stock, hides and leather, leather goods, textiles and yarns, automobile accessories.
- MARPER, MARSHALL & THOMPSON CO., 2 Rector St., New York, N. Y. Established 1916. Telegraphic address, 2 Rector. Codes used, A. B. C 5th edition, Lieber's, Bentley's. Principal imports: Raw silks, piece goods, Oriental oils, camphor, satins, insect flowers and powders, celluloid products, surgical implements. Principal exports: Iron and steel products, chemicals, glassware, machinery, oils, cotton and woolen goods, textiles, drugs, waxes, electrical supplies, automobiles, leather. Branch office addresses, 242 Central Bidg., Seattle, Wash.; 441 Mills Bidg., San Francisco, Calif., 15 Pustervikstatan, Gateborg, Sweden; 23 Yamashitacho, Yokohama, Japan; Kobe, Japan; 22 Customhouse, Boston, Mass.
- L. S. HOLTEOG & COMPANY, 55 Broadway, New York. Established 1915. Telegraphic address, Holtzog. Codes used, A. B. C. 4th and 5th edition, Lieber's and Western Union. Principal imports: General merchandise. Principal exports: General merchandise. Bank references: Battery Park National Bank of N. Y.; National City Bank of New York.
- EUMMEL & BOBINSON 26 Cortland St., New York, N. Y. Established 1915. Telegraphic address, Ahmul. Codes used, A. B. C. 5th, Lieber's, Western Union. Importers of: Metals, minerals, oils, hides, albumen, byproducts. Exporters of: Chemicals, drugs, dyes, colors, tanning materials, greases. Bank references, American Exchange National Bank, New York.
- IBERO-AMBRICAN EXPORT CO., INC., 8-10 Bridge St., New York, N. Y. Branch office addresses, 101 Rue Reumur, Paris; Bajada Miguel I, Barcelona, Spain. Established, 1914. Telegraphic address, Ibero American. Codes used. A. B. C. 5th edition, Lieber's, Western Union, Private. Principal imports: Seeds, leaves, roots, nuts, (Spanish Products). Principal exports: Drugs, chemicals, oils, greases, paints, machinery and metals, steel products. Bank references: Equitable Trust Co. of New York, Foreign Dept.
- THERSTATE PULP & PAPER CO., INC., 1050 Grand Central Terminal, N. Y. Established 1915. Telegraph address, Elpaperco. Codes used, any. Principal exports: Paper of all kinds, writing, book, magazines, news, wrapping paper and boards. Bank references: Chatham, Phenix National Bank, New York; Metropolitan Trust Co., New York.
- HATEBBRACK & BULLOCK COMPANY. Established 1910. Head office address, 100 William St., New York City. Branch offices, 53 State St., Boston, Mass.; Broad St. Bank Bldg., Trenton, New Jersey; Railway Exchange, Chicago; 2nd National Bank Bldg., Akron. Ohio; Monadnock Bldg., San Francisco, Cal. Bank references, Broad St. Bank, Trenton, N. J. Telegraph address, "Kabock." Codes used, A. B. C. 5th Edition, Lieber's 5 letters, Simplex, Rentley's. General importers. Exporters of chemicals, dyestuffs, minerals, etc.

- office, 46 Cliff St., New York. Cable address, Innis, New York. Principal imports: China and Japan—Chemicals in the way of potash salts, also egg albumen, soya bean oil, antimony, as well as menthol and other essential oils. We manufacture for export various chlorine products, bleaching powder, caustic soda, a special quality of decomposed silica for paint and polish manufacturers, also for color makers, and are agents for a number of American producers of milk byproducts, including casein and sugar of milk. Our general line is industrial chemicals as distinguished from medicinal chemicals, for manufacturers of paint, leather, soap, glass, wool, cotton, silk, metal goods, dyes, natural and artificial.
- New York, N. Y. Branch office addresses, Holzapfels Ltd., 6 Broad St. Place, London, E. C. Established, 1904. Telegraphic address, International. Codes used, Bentley's, A. B. C., Western Union. Principal imports: None. Principal exports, Paints for ships bottoms. Bank references: Guaranty Trust Company.
- THE KEEME COMPANY. Established 1893. Head office address 335 Broadway, New York; branch office address, 52 Gray's In Road, London; Telegraphic address "Razorine." All codes used. Bank references: Barclay's Bank, Ltd. London, Greenwich Bank, 260 Broadway, N. Y. Importers of Natural native botanical, medicinal drugs, herbs and fine manufactured rare drugs. Exporters of drugs, pharmaceuticals, chemicals, colors and dye stuffs.
- A. KLIPSTEIN & COMPANY, 644-652 Greenwich St., New York City, U. S. A. Importers and exporters of chemicals, colors, gums, oils, tanning materials, waxes, raw materials, etc. Cable address, New York.
- G. J. ELUYSKENS, 112 W. 42nd St., New York, N. Y. Established, 1910. Telegraphic address, Kluysken, New York. Codes used, A. B. C. 4th and 5th Edition, Western Union, Lieber's, Bentley's. Principal imports, spices, rubber, tin, crockery, glassware. Principal exports: Iron, steel, hardware, machinery, chemicals, automobiles. Bank references, National City Bank, 55. Wall St., N. Y. Irving National Bank, Woolworth Bldg., Gotham National Bank, 1819 Broadway, N. Y.
- LAIDLAW RELLEY & COMPANY, INC. Head office address, 14 Platt St., New York. N. Y. Established 1917. Telegraphic address, Kelley 14 Platt. Codes used. A. B. C. 5th, Lieber's. Principal imports: Ores, minerals, raw products. Principal exports: Pharmaceutical and industrial chemical, oils, metals, cotton goods, paper, food products. Bank references: Equitable Trust Company, New York.
- P. L. ERABMER & CO., 10-12 Broadway, New York, N. Y. Established 1900. Telegraphic address, Fredelkra. Codes used, A. B. C. Custom brokers. Import and export freight forwarders. Branch office, 907 White Bldg., Seattle, Wash. Bank references, Produce Exchange Bank, New York; Metropolitan Bank, Seattle, Wash.
- Church St., New York, N. Y. Established, 1881. Telegraphic address, Langaines. Codes used. Western Union, A. B. C. Exporters, of agricultural implements. Bank references, Bankers Trust Company, New York, N. Y.
- York City. Established, 1865. Cable address, "Lasker."
  Codes used, all standard codes. Bank references, National City Bank, Guaranty Trust Company, Hanover National Bank. Importers of beans, peas, oils, seeds, fats, chemicals, braids, hats, cotton goods, hosiery, hardware, notions, novelties, sponges, chamois skins, toilet articles.
- N. Y. Established, 1910. Telegraphic address, Siscostal, New York. Codes used, Public codes and private. Principal imports: Raw materials, finished products, crude drugs, camphor menthol, vegetable wax, and other waxes, animal hair, starches, gums, matches, beans, spectacles. Principal exports: Dry goods, paper, coca, factory supplies, general merchandise, crude drugs specialties. Bank references: National Bank of South Africa Ltd. of London and New York; Coal & Iron National Bank, 143 Liberty St., New York.
- New York City. Established, 1907. Branch offices, 1515 E. Seventh St., Los Angeles; Kohl Bldg., San Francisco; Oliver Bldg., Pittsburgh; Texas Company Bldg., Beaumont, Texas; Shreveport, Louisiana; Tampico, Mexico; 1-5 Broad St. House, London, E. C. England. Cables address, "Luceoil." Codes used, Western Union, A. B. C. 5th edition, Lieber's, Bentley's, Lucey Special. Bankers, Farmers & Merchants Bank, Los Angeles, Bank of the Manhattan Co., the Guaranty Trust Co., of New York. Principal exports: Oil well supplies, iron and steel products, general machinery, mechanical goods, electrical goods, etc.

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- York, N. Y. Established, 1911. Telegraphic address, Myosotis. Codes used, A. B. C. 5th edition. Principal imports: Seeds for planting, seeds, spices, herbs, drugs, leaves, oil-bearing seeds, all agricultural products, food products, beans, peas, etc. Principal exports: Same as imports. Bank references: Irving National Bank, New York; Produce Reporter Company, Chicago, Ill.
- MANHATTAN TRADING CORPORATION, 2 Rector St. New York City. Established, 1916. Telegraphic address, Manhattan Trading. Codes used, Bentley's, A. B. C., 4th Edition and 5th Edition, Lieber's. Principal imports: None. Principal exports: Colors, chemicals and intermediates. Export agents: United States Color and Chemical Co., Inc., Briston, Factory, Ashland, Mass. Colors are packed in tins, kegs or barrels to suit the customer's wishes. Bank references: Guaranty Trust Company of New York.
- NARDEN, ORTH & MASTINGS CORP., 61 Broadway, New York, U. S. A. Buy direct from the manufacturer. Acid colors, basic colors, chrome colors, direct colors, sulphur colors, oil soluble colors, coal tar intermediates. All chemicals and oils for the textile, soap and paper industries, also barum nitrate, barum carbonate, barum chloride, muriate of potash, carbonate of potash, permanganate of potash, sulphate of potash, crude black salts, yellow prussiate of soda.
- MULLER, MACLEAN & CO., INC., 11 Broadway, New York. Branch office addresses, Bombay, Calcutta, Madras, India, Colombo, Ceylon, Rangoon, B. B. Sumatra, Manila, P. I., Straits Settlements, Hawaiian Islands, New Zealand, Australia, Borneo, Egypt, South Africa, China, Japan, Siberia, Siam. Established, 1883. Telegraphic address, "Wilmico." Codes used, A. B. C., Bentley's, Western Union, etc. Manufacturers representatives. Bank references: Irving National Bank, Chemical National Bank,
- MATIONAL IMPORTING & TRADING CO. Head office, 50 Broad St., New York City. Branch office address, Chicago, Ill., 30 N. Dearborn St. Established, 1914. Telegraphic address, Natinitrad, New York. Codes used, all standard and private. Principal imports: Food products.
- ORMEROD EXPORT CORPORATION. Established, 1918.
  Address, 50 Church St., New York City. Telegraphic address "Ormerod." Codes used, A. B. C., 5th Edition.
  Importers general lines. Exporters of: Raw cotton, chemicals, drugs, metals, tobacco, etc.
- PACIFIC COMMERCIAL COMPANY, 80 Wall St., New York, N. Y. Branch office addresses, 1205 Hoge Bidg., Seattle; 310 California St., San Francisco. Telegraphic address, Pacomeco. Codes used, all standard codes. Principal imports: Oils, copra, hemp, cigars, spices, manufactured products. Principal exports: Hardware, steel, machinery, chemicals, canned fruits, fish, vegetables and meats, lumber, gasoline, textiles, beans, flour, fresh fruits and all manufactured products. Bank references: Any bank in New York, San Francisco or Seattle.
- PARSONS TRADING COMPANY, 17 Battery Place, New York, U. S. A. Branch offices in the Pacific, 249 Hornby Road Bombay, 340 Kent St., Sydney; Equitable Bldg. Melbourne; 235 Lambton Quay, Wellington. Everything for the paper dealer and the printer. Presses, folders, book-binding machinery, lithographing, photo-engraving, electrotyping and stereotyping machinery, envelope and box making machinery, paper testers, also writing papers, ledger papers, printing papers, coated papers, wrapping papers, biotting papers, tissue papers, bristol boards, box boards, etc.
- PASS & SEYMOUR, INC. Established, 1890. Office address, 6 Church St., New York City. Telegraphic address, "Passmour." Cables used, Lieber's, A. B. C. 5th edition, Bentley's and Western Union. Bank references: First National Bank, Syracuse, National City Bank, New York City. Exporters of electrical wiring devices, lampholders, dim a lites, heating pads, etc.
- PERLESS INTERNATIONAL CORPORATION, Woolworth Bldg., New York, U. S. A. Exporters, importers, engineers, contractors, manufacturers' representatives. To the foreign customer: Your interests are paramount and deserve the most careful consideration. Service is the essence of foreign trade, and it is to your advantage to place your order where the service rendered is most efficient. Exports: Steel, copper, brass, aluminum, nickel, lead and miscellaneous metals, plates, bars, sheets, tubes, rails, wire hoops, bands, bolts, nuts, spikes, nails, barbed wire, wire, insulating tape, cloth, cable, machinery, chemicals, tools, cotton goods Imports: Wool, hides, skins, beans, vanilla, albumin, coffee, tea, cocoa, dye woods, honey, beeswax hemp, rubber, chicle, seeds, oil, mica.
- PREMIER TRADING CO., 32 Broadway. Established, 1914. Principal exports: Canned goods. Principal exports: Auto supplies, machinery, autos, iron and steel.

- JAMES W. PEYFE & CO., 123 Front St., New York, N. Y. Established, 1884. Telegraphic address, Phyfe. Codes used, A. B. C., 5th Edition, Lieber's, Bentley's. Principal imports: Coffees, spices, cocoa, rubber, copra, and other East Indian products. Principal exports: Cocoa powder cocoa butter, beans and peas. Bank references: Mechanics & Metals National Bank, New York; Merchants National Bank, New York.
- W. E. ROBINSON & COMPANY, Philadelphia, U. S. A. Cable address, Robinson & Company. Codes used, Western Union, A. B. C., 3rd Edition, Bentley's, Watkins. Exporters of steel rails, bar steel, pig iron, etc.; coal, coke, foodstuffs, flour, motor trucks, automobiles, chemicals, dyes, field tractors and general hardware.
- BOGERS, BROWN & CO., 80 Church St., New York, and branches. Exporters, importers and dealers in pig iron, coke, ferro manganese, spiegeleisen, ferro alloys, flour, spar, manganese, chrome and iron ores. Cable address, Rogerbrown, New York. No connection with Rogers Brown & Co., Seattle, Wash.
- ROSCO TRADING CO., INC. 66 Leonard St., New York City. Telegraphic address, Rostracomp, New York, New York. Codes used, A. B. C., 4th and 5th, Lieber's, Western Union, Commercial, A-1. Principal imports: Hides, skins, cocoa, ores, rubber, wool, cotton, beans, castor oil coffee and all raw products in general. Principal exports: All commodities made in or products of the United States.
- ROTEWELL & COMPANY, INC. Cable address, Rothco. Codes used, A. B. C., 4th and 5th Edition, Bentley's, Western Union, J. K. Armsby. Head office, 97 Warren St., New York City. Branches, 902 Hoge Bidg., Seattle; 36 Avenue de l'Opera, Paris, France; Sussex St., Sydney, Australia. Warehouses, Martinsburg, W. Va.; Charlottesville, Va. Importers and exporters, copra, oil, canned salmon, fruits, tallow, beans, milk, naval stores, heavy chemicals, dye stuffs.
- SCHNOLL FILS & CO., 28 Spruce St., New York, head office. Branch offices, Chicago, Boston, Havana, Cuba: Paris, France; Basie, Switzerland. Established, 1850. Telegraphic address, Schmollfus, N. Y. Codes used, A. B. C., 4th and 5th Edition, Lieber's, Bentley's. Principal imports and exports, untanned cattle and horse hides, calf, goat, sheep, deer, elk skins, tanning materials and Eastern produce. Also French agents for Du Pont fabrikoid.
- New York, Hongkong, Canton, Shanghal, Tientsin, London, etc. Importers, exporters, shipping and insurance agents and general merchants. Export specialties in Japanese matting cotton, wool carpets, blankets, tea rubber, hardware, chemicals, etc. Import specialties in spinning and weaving machinery and mill supplies, oil and paints, Manila rope, etc. Agents for American Asiatic Steamship Co., Green Island Cement Company, Ltd., Hongkong Rope Manufacturing Co. Ltd., Siam Forest Co. Ltd., New Zealand Insurance Co. Ltd.
- JOHN C. SPARKS, office 30 Church St., New York City. Established, 1914. Telegraphic address, "Sparchem," New York. Codes used, Bentley's, A. B. C., 5th Edition, Western Union. Exporters of the famous Eagle Brand Dyes, packed in bulk and also in special tins for the export trade, each tin being covered with colored paper representing the color the dye will produce.
- STAR P. & V. CORP., 106-108 Fulton St., New York. Established, 1918. Cable address, "Corpustar." Codes used, A. B. C. 5th edition, Lieber's, Western Union. Bank references, Franklin Trust Co., Wall Street, New York City. Principal exports: Motor trucks, automobiles, farm tractors, automobile tires (both solid and pneumatic), motorcycle and bicycle tires, mechanical rubber goods, matting and shoe soles and heels; also automobile accessories and sundries. Drugs and chemicals, paints and varnish.
- J. P. STARKEY & CO., INC., 11 Broadway. Established. 1882. Telegraphic address, Robbie, New York. Codes used, A. B. C., 5th Edition, Lieber's, private. Principal imports: Wool, oils, hides, skins, peas, egg albumin, bristles, jute, cotton, manganese ores. Principal exports: Iron and steel, agricultural implements, cutlery, boots and shoes, heavy chemicals, cotton goods, cement, canned fruits, vegetables, fish and meats, dried fruits, flour, cereals, provisions, lard and food products generally.
- CHAS. T. STORX & CO., IEC., Tribune Bldg., 154 Nassau St., New York, N. Y. Branch office addresses, San Francisco, Cal.; Kobe, Japan and Puerto Plata, Dominican Republic. Represented in Hongkong, China and Saigon by Messrs, Floquet & Knoth, in Semarang, Dutch East Indies by Messrs, Jonkhoff, Stork & Co. All codes used. Principal imports: Oils, shellac, kapok, strawbraids, etc. Principal exports: All kinds of machinery, complete factory installations, railway supplies, chemicals, drugs, soaps, oils, automobiles, and all kinds of merchandises.

Established 1884

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General Merchandise

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San Francisco
405 American National Bank Bidg.
Seattle
709 Arctic Bidg.
Buenos Aires
Viamonte 939

Cable Address: Bakerbro, New York Bentley's Code used

References: Any large bank in New York or its connections throughout the world

Established 1850

# H. J. Baker & Bro.

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- SOLOMON STERN LTD., OF AMERICA, 369 Broadway, New York City. Established 1917. Cable address, "Sternading.' Codes used, A. B. C., 5th Edition, Bent-ley's. Branch office, 12-13, Nichall Square, London, E. C. Manchester, Glasgow. Bank references, American Ex-change, National Citizens, National New York.
- N. Y. Branch office addresses, Parent House, Messrs. Strachan, Oswell & Co. Ltd., 6 Broad St. Place, London, E. C. England. Established, 1917. Telegraphic address, Jepson. Codes used, Broomhall's, Bentley's, A. B. C., 5th Edition, Western Union. Principal imports: Wool, ores, boxwood, hides and skins, waxes, China and South African produce. Principal exports: Paper, iron and steel, piece goods, dry goods, hardware, electrical equipment, boots and shoes, and general merchandise. Bank references, Brown Brothers & Company.
- York City. Head office, Branch office, 31 Queen St., Melbourne, Australia. Established, 1825. Telegraphic address, Linshow. Codes used, Bentley's, Western Union. A. B. C., Lieber's A-1 code, also World's Universal. Principal imports, produce of all kinds from China, Japan, Philippines, Java, Straits Settlements and South Sea Islands, also South America. Principal exports, practically everything exported from this country in the shape of manufactured goods, agricultural implements, automobiles, trucks, tractors, naval stores, lumber, machinery, etc. lumber, machinery, etc.
- EUGEME SUTEE, 120 Broadway, New York, N. Y. Established 1914. Telegraphic address, Genesuter. Codes used, all standard, A. B. C., 5th Edition and others. Branch office address, Yokohama, Japan. Importers of: Chemicals, oils, colors, general merchandise. Exporters of: Chemicals, oils, colors, general merchandise. Bank references, Irving National Bank, New York; Liberty National Bank, New York; Liberty National Bank, New York; Guaranty Trust Company, New York and Paris; Swiss Bank Corporation, Basle and London; International Banking Corporation, Yokohama.
- TORNABBLL & CO., 96 Wall St. Telegraphic address, Nabelco. Codes used, Western Union, A. B. C., 5th Edition improved. Principal exports: Drugs.
- TROY LAURDRY MACRIMERY CO. LTD., 133 Carter St., New York, N. Y. Branch office addresses, London, Paris, Melbourne, Havana, Rio de Janeiro. Established, 1881. Telegraphic address. "Tolamaco." Codes used A. B. C. Bentley's Western Union, Lieber's. Principal exports: Laundry machinery. Principal imports: None.
- U. S. CERNICAL EXCHANGE, 59 Pearl St., New York, N. Y. Established, 1915. Codes used, all. Principal imports: Pharmaceuticals. Principal exports: All heavy chemicals, oils and pharmaceuticals. Bank references, Irving National Bank of New York.
- U. S. EXPANSION BOLT CO., 250 Elm St., New York, N. Y. Established 1912. Branches 111 New Montgomery St., San Francisco; 422 Transportation Bldg., Chicago, Ill.; Bank of Hamilton Bldg., Toronto, Ontario. Exports: Expansion bolts, lead screw anchors, toggle bolts, star drills.
- U. S. STREE PRODUCTS COMPANY, 30 Church St., New York City, U. S. A.; London, Egypt House, 36 New Broad St., E. C. Cable address, "Steelmaker, New York and London." Branch offices all over the world, Exporters of the products of Carnegie Steel Co., Illinois Steel Co., American Steel & Wire Co., American Sheet & Tin Plate Co., Shelby Steel Tube Co., American Bridge Co., The Lorain Steel Co., National Tube Co., Tennessee Iron & Railroad Co., Minnesota Steel Co. Solicit inquiries on all steel products.
- WIBLE, BLACKWELL & BUCK. Head office address, 49
  Wall St. Branch office addresses, London, Parls, Shanghai, Rio de Janeiro, Buenos Aires. Established, 1906.
  Telegraphic address, Hydroelec. Codes used, all authorized codes. Principal imports: Wool, hides. skins, beans, peas, chemicals, mica, etc. Principal exports: Iron steel and metal products of all kinds, machinery, electrical goods, chemicals, hardware and general merchandise
- YULCAN TRADING CORPORATION, 120 Broadway, New York, U. S. A. General merchants, importers, exporters, manufacturers' agents. The entire facilities of this great organization are at your disposal for the conduct of your export and import business. Inquiries for raw and manufactured products of any country are solicited. Liberal advances will be made on consignments. Cable inquiries and offers will receive prompt attention. Complete replies by cable will be made.
- ALPRONSE WEIL & BROS., 81 Fulton St. Established, 1874. Telegraphic address, Alphonse, New York. Principal imports: Hides, skins, general merchandise. Principal export: Leather.

- PAUL WENGER CO., 56-58 Liberty St., New York City. Principal imports Tin, antimony, various ores, and chemicals. Principal exports: All metals, brass, sheets, tin plates, copper sheets, greases and chemicals. Desire to assume agency for above imports and exports.
- MESSES. J. WITKOWSKI & CO. LTD., 45 E. 17th St., New York City. Established, 1859. Cable address "Jaywico." Codes used, A. B. C., 4th Edition, A-1. Lieber's Simplex Standard, Western Union, A. B. C. 5th Edition improved, Bentley's. Branch offices, Yokohama, Kobe, Nagoya. Bank references, The Hongkong & Shanghai Banking Corp., International Bank, The Chartered Bank of India, Australia & China. General importers and exporters.

## **NEW WESTMINSTER. B. C., CANADA**

THE T. E. SMITH CO. LTD., 623-627 Columbia St. Established, 1901. Principal imports: Dry goods and ladies and children's ready to wear.

## NORTH BEND, OREGON, U. S. A.

- **BUBBIER LUMBER CO.** Established 1916. Principal exports: Lumber, Douglas fir and spruce.
- **TORTH BEND MILL & LUMBRA CO.** Head office, North Bend. Branch office, 430 Sansome street, San Francisco. Established 1913. Telegraphic address: San Francisco office, "Finance." Principal exports: Douglas fir and Sitka spruce lumber.

## OAKLAND, CALIFORNIA, U. S. A.

- CALIPORNIA PAINT CO. Head office address, 1797
  Twelfth St. Branch office addresses, 402 Monadnock
  Bldg., San Francisco. Established, 1865. Telegraphic
  address, Cal-Pa-Co. Codes used, Bentley's, A. B. C. 5th
  Edition, Western Union. Principal imports: Oils, copra
  and casein. Principal exports: Mixed paints, varnishes,
  oils, pastes, dry colors, dyes, leads, zincs.
- COOS BAY LUMBBE CO., 711 Syndicate Bldg., Oakland, Cal. Branch office address, Marshfield, Oregon. Established 1914. Telegraphic address, "Oakland," Cal. Principal imports: None. Principal exports, none. Bank references, Central-Oakland, Bank of California, San Francisco, Continental and Commerce.
- PAGOEL MOTORS CO., 107th Ave. and Hollywood Blvd., Oakland, Cal. Established, 1916. Principal exports: 2, 3½ and 5-ton motor trucks and Fagoel farm tractors. Bank references: Anglo London and Paris National Bank, San Francisco, Cal., and Commercial National Bank, Oakland, Cal. Seeking trade in all Pacific Coast countries as far as India.
- LIBSTEN & COMPANY. Head office, postoffice "E" Oakland, Cal. Branch office, California Fisheries Co., Monterey, Cal. Established, 1904. Telegraphic address, Kirstenco. Codes used, A. B. C. 4th and 5th editions, Western Union, Lieber's, Bentley's, Armsby's. Principal imports: Oriental products like peanuts, beans, camphor, vegetable oils, chillies, oils, etc. Principal exports: Canned sardines, herring, salmon, salt herring, salt salmon, canned fruits and vegetables, dried fruits, raisins, beans.
- Head office address, Fourth and Powell Sts., Oakland. Cal. Branch offices, all over the world. Telegraphic address, Marcalco. Codes used, Western Union. Principal exports: Calculating machines. Bank references, Central National Bank of Oakland.

### OSAKA, JAPAN

- AMASARI CO. LTD. Established, 1915. Head office, Hirano-machi, 2-chome, Osaka, Japan. Branch office, 96 Sannomiya-cho, 3-chome, Kobe, Japan. Telegraphic address, "Amasaki," Osaka. Codes used, A. B. C. 5th, Bentley's. Importers of: Raw cotton, iron and steel products, chemicals, indigos, ivory tusks, paraffin, etc. Exporters of: Cotton and slik piece goods, yarn, matches, chemicals and drugs, glass, cement, etc. Bank references, The Yokohama Specie Bank, The Mitsui Bank.
- FUKUSEIMA & CO. Head office, Nishinoda, Kitaku, Osaka.
  Branch offices, Soerabaia and Batavia. Established.
  1904. Telegraphic address, Fukushima. Codes used. A.
  B. C. 5th Edition and private. Principal imports: Java
  products. Principal exports: Cotton and silk plece
  goods, hosiery, metal, tools, chemical products, cosmestibles, toys, and sundry goods, etc.

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& Co.

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Commonwealth Government Line of Steamers between Australia and North Pacific Ports.

Fife Shipping Company, operating fleet of lumber carriers.

#### **Export Agents for**

Alaska Packers' Association. California Packing Corporation.

Pacific Coast Agents for

Weirton Steel Co., Weirton, West Virginia.

#### Managers of

The United States Whaling Co. Crown Flour Mills, Portland, Oregon. The Olympic Portland Cement Co., Ltd.

#### Exporters of

Grain, Flour, Lumber, Coffee, Canned Salmon, Canned and Dried Fruits, etc.

#### Importers of

Sugar, Copra, Steel, Coal, Coke, Fertilizer, Oriental Oils, Jute and Jute Goods, Kapok, Chemicals, Pig and Bar Iron, Beans, Nitrate of Soda, etc.

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> Balfour Agencies, Chicago Williamson Balfour & Co., Valparaiso

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& Co.

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New York Office: 10 and 12 Broadway

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Special Department for importing Machinery, Metals and all classes of Hardware

- MAYASHI OTORICHI SHOTHM, 16 Hamadori 2 chome, Dojima, Osaka, Japan. Established, 1882. Cable address, "Hayashi Osaka." Code used, A. B. C. 5th Edition, AI, Bentley's phrase code, Western Union, etc. Branches, 14, Kodemmauwacho, Nihombashiku, Tokyo, Japan. Bank references: The Yokohama Specie Bank, Ltd., Osaka, The Sumitomo Bank, Ltd., of Osaka. Imports: Tools and hardware. Exports: Hardware and general merchandise.
- IWAI & CO. LTD. Head office, 4 Chome Kitshama Higashiku, Osaka, Japan. Branch offices, Kobe, Tokyo, Yokohama, New York City, Hankow, Shanghai, Oturo. Established, 1879. Telegraphic address, Iwai. Codes used, A. B. C. 5th Edition, A-1, Western Union, Lieber's, Bentley's, A. B. C. improved, Scott's 10 Ed., Schofield's, Iwai's private codes. Principal imports: Chemicals, drugs, papers, pulp, metals, glasses, textiles, wools, match materials, hemp, gunny bags, rape cake, bean cake, etc. Principal exports: Produce, metals, matches, chests, planks, chemicals, drugs, braids, hats, habutae, silk goods, cotton goods, celluloid and celluloid goods.
- KASIA & CO. Head office address 112 Nakanoshima Nichome, Kitaku, Osaka, Japan. Branch office addresses, Kobe, Tokyo, Yokohama. Established, 1907. Telegraphic address, Kasai, Osaka. Codes used, A. B. C. 5th Edition, Western Union, Lieber's, Standard, Parker's Safeguard, A-1, Bentley's complete phrase code, private. Principal imports: Leather, hides, chemicals, beans, seeds, fertilizer, animal bones, pig bristles, steel products, etc. Principal exports: Beans, seeds, singer, chillies, peanuts, potato starch, fish and whale oil, bean and other vegetable oils, matches, Portland cement, brushes, cotton and mercerized yarns, paper, hemp, straw and chip braids, etc.
- G. KAWAHARA CO., 3 Chome Nakanoshima, Osaka, Japan. Branch offices: 1905 L. C. Smith Bldg., Seattle, Wash.; Vladivostok, Siberia; Harbin, Manchuria; Macassar, Celebes, D. E. I.; 1 D'Almeida St., Singapore, S. S.; Cocoanut Plantation, Dobo, Aroe Islands, D. E. I. Principal exports: Cocoanut oil, copra, gum, copal, gum damar, pepper, mace, nutmegs, cutch, gambler, rubber, tin, buttons, shells, beans, peas, sandal wood, ebony wood-rattan, dextrine, rice flour, menthol, gunny bags, burlap and all other tropical products. Principal exports: Iron and steel articles, paraffin wax, chemicals. Bank references: Bank of Taiwan, New York, Bank of California, Seattle, Sumitomo Bank, Seattle.
- MUTUAL PRODUCTS TRADING COMPANY, Minamihorie, Osaka, Japan. Branch office addresses, head office, Osaka, Japan; 952 Empire Bldg., Seattle, Wash.; Kikuicho, Nagoya, Japan. Established. 1913. Telegraphic address, "Sogo." Codes used, Western Union, Bentley's A. B. C. 5th Edition, Excelsior and Western Union 5th Edition. Principal imports: Oil, cotton goods, oranges, grains, nuts, dried fish and all kinds of Oriental products. Principal exports: All kinds of Iron and steel products, machinery, automobiles, chemicals. Bank references for Seattle office: Dexter Horton National Bank, Seattle.
- THE MANIWA HOVEKI SHOKAL Head office, 136 Satsumabari, Kitano cho. Osaka. Branch offices, Kabura, Kiushiu and Tokyo. Established, 1910. Telegraphic address, Naniwa. Codes used, A. B. C. 5th, Lieber's, Western Union, Simplex Standard code, and private codes. Principal imports, machinery and materials of all descriptions. Principal exports: Electrical supplies and fittings, copper and brass tubes, rods, sheets, wires and cables, hardware, copper and brass boat nails, rivets, washers, screws and nuts, tacks, iron bolts and nuts; files, vises, etc., Japanese wood, tea, rubber and candle chests, soft goods and general merchandise.
- EEICHI TORIE, 2 Tsuriganecho Itchome, Osaka, Japan. Established 1913. Telegraphic address, Stroie. Codes used, A. B. C. 5th Edition, private codes. Principal imports: Hardware, dyes, raw products, semi-manufactured goods. Principal exports: All Japanese goods. Bank references, The Yokohama Specie Bank Ltd., Osaka, Japan.
- 8. YOSHIRARA & CO., Okawacho Higashiku. Telegraphic address, Yoshihara, Osaka. Codes used, Bentley's complete phrase and A. B. C. 5th Edition improved. Principal exports: Vegetable oils of all kinds, such as sesame oil, perilla oil, peanut oil, wood oil, linseed oil, castor oil, cocoanut oil, etc.

## PAITA, PERU

G. ARTADI & CO. Head office address, Paiti, Peru. Branch office address, Callao Arsenal 17-Sullana, Piura. Telegraphic address, Artadi. Codes used, A. B. C. 5th Edition, Lieber's. Principal imports: General merchandise of all kinds and descriptions. Principal exports: Hides, skins, cotton, sugar, and all Peruvian products.

## PADANG, SUMATRA

E. LEVISOE, Padang. Established, 1909. Telegraphic address, Levison. Codes used, A. B. C. 5th. Principal exports: Copra, hides, rattans, coffee, arachides, mace, nutmers.

#### PENANG. STRAITS SETTLEMENTS

- EASTERN TRADING CO., 35 Pitt St., Penang, S. S. Established, 1913. Cable address, "Pinchong." Codes used, A. B. C. 5th Edition, A-f. Bentley's complete phrase, special private cypher codes. Branch office, 24 High St., Ipoh, F. M. S. Bank references, Hongkong & Shanghai Banking Corp., Penang. Importers of: Cement, beer, wine, spirits, carbide, acids, porcelain and glassware, rickshaws, rubber tires, wheat flour, mining requisites, building materials, milk, soap, etc. Exporters of rattan, copra, cocoanut oil, pepper, rubber, copra, gum, hides, sago flour, tapioca, mangrove bark, cutch, patchouli leaves, etc.
- **EAMDILANDS EUTTERY & CO.**, Penang. Head office address, London House Crutched Friars, London. Branch office address, Sandilands Buttery & Co., Singapore. Established about 1865. Telegraphic address, Sandilands Penang. Codes used, A. B. C. 5th, Western Union. Broomhall's Rubber & Ordinary, Bentley's Principal imports: General. Principal exports: Rubber, tin, tapioca, spices, etc.

#### PERTH. AUSTRALIA

- brown & Dureau, Ltd. Head office address, Melbourne, Australia. Head office address for W. A., Bristol House, Murray St., Perth. Branch office address, Phillimore St., Fremantle, W. A. Established, 1834. Telegraphic address, Agent. Codes used, Bentley's, A. B. C. 5th, Western Union, Riverside. Principal imports: Metal goods, canned fish, canned and dried fruits, dried fish, textiles, chemicals, paper. Principal exports: Canned and fozen meats, mother of pearl shell. minerals, flour, wheat, fruits, hardwoods (Jarrah Karri).
- EUGO FISCHER, LTD., Wellington St., Perth, Australia. Established, 1904. Telegraphic address, Hugo Fischer, Perth. Codes used, A. B. C. 5th. Principal imports: Saddlers harnessmakers' hardware, collar checks, saddlers' serges, felts, hemps, machine threads, brushware, lamps, lanterns, trace chains, bootmakers' grindery, canvas, sail cloth.
- GODDAED & FREECORN, 18 Howard St. Established, 1915. Telegraphic address, "Shipmate." Codes used. A. B. C. 5th, Western Union. Principal imports: Jute goods and hessian's, confectioners', brewers, pastry cooks, and tanners' raw materials; confectionery, coffee, kapok, buck chemicals, wholesale groceries, edible meats, three-ply veneer, dyes and colors, dried fruits, glue, eastern produce, gum arable, shellac, iron and steel, castor oil, essential oils, sulphur, twines. Principal exports: Wheat flour, mallet, bark.

### PHILADELPHIA, PA., U. S. A.

- PENESYLVANIA STEEL EXPORT COMPANY, Philadelphia, U. S. A. Cable address, Steelex-Philadelphia. Branch offices, 47 Victoria St., London, and Kobe, Japan. Structural shapes, plates, bars, hoops, strip steel, tin plate, wire products, forgings, steel sheet inter-lock piling, pipe, industrial equipment sheets, pig iron, billets, blooms, slabs, sheet, bars, skelp bolts, nuts, rivets, spikes, tool steel, shafting, steel castings, drying apparatus, agricultural machinery, hydraulic tools and equipment, wood working machinery of all kinds, sugar apparatus, industrial, contractors and narrow gauge railroad equipment, power plants, gas producers, gas plants, electric machinery, centrifugal apparatus and furnaces.
- QUAKER CITY SUPPLY CO. Manufacturers, exporters, importers, Philadelphia, U. S. A. Cable address, "Monsem." Codes, A. B. C. 5th Edition, Western Union and Watkins Overseas merchants. As exporters we have exceptional facilities for universal distribution of American made goods. Agencies in all the principal commercial centers. As importers we have a thorough knowledge of trade conditions, combined with extensive business connections, enables us to efficiently distribute foreign products. We solicit correspondence and inquiries in any commercial language. Owners: Quaker City Steamship Co., Inc.

## Barneson Hibberd Co.

324 Sansome Street

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Ship Agents
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ESTABLISHED 1852

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Braun - Knecht - Heimann Co. San Francisco, U. S. A.

- W. E. ROBINSON & CO., 1520 Real Estate Bldg. Established, 1917. Telegraphic address, Robinson Company. Codes used, Western Union, A. B. C. 5th Edition, Bentley's, Watkins'. Principal imports: Shell buttons, matches, brushes, toys, china wood oil, matting. Principal exports: Steel, tin plate, chemicals, dye stuffs, belting, machinery, nails, leather and imitation leathers.
- TRADESMEN'S MATIONAL BANK, 431 Chestnut St. Established 1846. Telegraphic address, Trabank. Codes used, Lieber's, A. B. C. 5th Edition improved, Peterson's International, Bentley's, Hartfield's, Banks and Brokers. Principal imports: Wool, hides, sheep and goat skins, coffee, tea, copra, taploca, flour, ore, sugar. Principal exports: Cotton, leather, clothing, grain, agricultural machinery, oil, syrup, etc.

## PORTLAND, ORE., U.S. A.

- A. O. ANDERSEN & CO., 808 Wilcox Bldg., Portland, Oregon. Branch office address, 605 Leary Bldg., Seattle, Wash. Established, 1916. Telegraphic address, "Pacao." Principal imports: Oriental and Australian products. Principal exports: Lumber, steel products and canned goods. Bank references: Northwestern National Bank, Portland, Oregon; Guaranty Trust Co., New York.
- ARISS, CAMPBELL & GAULT, Portland, Oregon. Established, 1904. Portland, Seattle, Tacoma. Telegraphic address, Arcamault. Codes used, A. B. C. 4th and 5th Edition, Western Union. Principal imports: Peanuts, beans, spices, taplocas, oils, etc. Bank references, any bank Portland, Seattle, or Tacoma.
- 8. BAN COMPANY. Head office, 34 N. Third St., Portland. Branch office, 3 Snachome Sanjukenbori, Tokyo, Japan; 2009 Larimer St., Denver, Colo.; 516 W. 17th St., Cheyenne, Wyo., Sheridan, Wyo., 111 N. Second Ave., Pocatello, Idaho; 530 Central Bldg., Seattle. Established, 1885. Telegraphic address, Ban. Codes used, A. B. C. 5th Edition. Principal imports: General merchandise, canned and dried food stuffs, silk goods, lacquerwares, chinawares, teas. Exports: Machinery, raw materials, automobiles and accessories.
- KAOLA COMPANY, Portland, Oregon. Branch office address, New York, Chicago. Established, 1910. Telegraphic address, "Kaola." All codes used. Principal imports: Copra. Principal exports: None. Bank references, Ladd & Tilton Bank, Portland, Oregon.
- LANGE KENYON & CO., 231 Pine St. Established, 1905.
  Telegraphic address, Langport. Codes used, A. B. C.
  5th Edition, Armsby's, etc. Principal imports: Ceylon
  tea, desiccated cocoanut, Greek cocoanut, Sicily filberts,
  Holland herring, Norway mackerel, herring, sardines,
  etc., French mushrooms, peas, sardines, etc.
- THE MORWEGIAN IMPORTING CO., 415 Worcester Bldg. Established, 1907. Telegraphic address, Paper. Codes used, A. B. C. 5th Edition. Principal imports: Paper, granite, machinery, tools, fish products and general merchandise.
- PACIFIC EXPORT LUMBER COMPANY, 1004 Chamber of Commerce Bldg. Portland, Oregon. Branch office address, 112 Market St., San Francisco, Cal. Telegraphic address, "Wheelright." Principal imports: Rice, peanuts, beans, peas. Principal exports: Lumber. Bank references, Bank of California, San Francisco; Wells Fargo National, San Francisco; First National Bank, Portland.
- PORTLAND ORIENTAL IMPORT & EXPORT CO., 617

  Dekum Bldg. Established, 1915. Telegraphic address,
  Portal. Code used, A. B. C. 5th. Principal imports:
  Silks, Panama hats, baskets, cotton crepe and Japanese
  lunch cloths.
- PORTLAND BUBBER MILLS, 368 E. Ninth St., Portland, Oregon. Established, 1912. Bank references, First National Bank of Portland. Exports: Rubber heels and fibre soles.
- **SMITH & WATSON IRON WORKS.** Founded 1885. Manufacturers, founders, engineers. Logging and hoisting machinery to suit any requirements. Sawmill and transmission machinery. We solicit your correspondence.
- BTEVERS & CO. T. M., INC. Head office, Portland, Oregon. Branch office, London, Eng.; Vancouver, B. C; Westminster Bidg., Chicago, Ill. Established, 1889. Telegraphic address, Stevens. Codes used, A-1, A. B. C. 5th Edition, Lieber's, Watkin's and private codes. Principal imports: Taploca, spices, rice, nuts, etc. Principal exports: Evaporated milk, salmon, canned rice and other food products.

### RANGOON, BURMA

- BALTHALAR & SOW. Established, 1857. Telegraphic address, Balmari No. Codes used, A. B. C. 5th Edition, Bentley's, Lieber's and private. Principal imports: Piece goods, hardware, wines, beer and spirits, paints varnishes and oils, cement, paper, matches, glass panes, enamelled iron ware, roofing tiles, steel, iron, brass, tin plate, C. I. sheets, wire, nails, canned provisions, etc. Principal exports: Hides, beans, tobacco, peanuts, timber, skins, cotton, etc.
- RANGOON INDUSTRIAL CO., No. 6 Judha Ezekiel St., Rangoon, Burma. Branch office, Mandalay. Bank references, Messrs. Balthazar & Son; The Netherlands Trading Society. Established, 1913. Cable address, "Rangoon Industrial Co." Codes used. A. B. C. 5th Edition, Bentley's, Lieber's, private. Principal imports: Steel, hardware, beer, old newspaper, olive oll, currants. Principal exports: Hides, tobacco, leaf, shellac, gunny bags, cutch, cocoanut oll, groundnut cake, beans, rice.
- WATEON & SOM. Head office address, 59 Phayre St. Branch office address, Tavoy, Burma. Established, 1888. Telegraphic address, "Watsonian." Codes used, A. B. C. Principal imports: Motor cars and accessories, motorcycles and accessories, pedal cycles and accessories, hardware in all its branches, men's wear, women's dress fabrics, etc.
- Y. ZOLLIKOFEE & CO. Head office address, 73 1/2 Merchant St., Rangoon. Branch offfice address, Y. Zollikofer, Zurich, Switzerland. Established, 1892, under name of Y. L. Backofen & Co. Telegraphic address, "Ofenbackco." Codes used, A. B. C. 5th, Lieber's, Bentley's. Principal imports: Cotton goods, hardware, earthenware, hosiery, yarns, enamelled ware, glassware, biscuits, confectionery, etc. Principal exports: Rice, beans, tobacco.

## ROCHESTER, N. Y., U. S. A.

TAYLOR INSTRUMENT COMPANIES. Established, 1861.
Telegraphic address, Tycos Rochester. Codes used, A.
B. C. 5th Edition, Western Union, Universal edition,
Lieber's, Bentley', phrase code. Principal exports:
Thermometers, barometers, automatic regulators,
gauges, hydrometers, meterological, aeronautical, surgleal and scientific instruments.

## ROTTERDAM, HOLLAND

INTERNATIONALE CREDIET EN MANDELSVERENIG-ING "ROTTERDAM.". Head office, Wijnhaven 169, Rotterdam, Holland. Branch offices, Batavia, Cheribon, Semarang, Soerabaia, Telok Betong, Singapore. Established, 1863. Telegraphic address, Internatio. Codes used, A-1, A. B. C. 5th Edition. Principal imports: All articles of interest for Java, such as cotton goods, iron and steel, fertilizers, sulphur, Portland cement, chemicals, manures, etc. Principal exports: Coffee, tea, tobacco, spices, cocoa, hides and skins, fibre, kapok, spirits, indigo, copra, cocoa.

## SAIGON, COCHIN CHINA

- DUMAREST & SONS, Quai Francis Garnier, Saigon. Branch office address, En France a Roanne (Loire) rue Beaulieu No. 13 au Cambodge a Pnom-Penh. Established, 1890. Telegraphic address, Dumarest Saigon. Codes used, A-1, A. B. C. 5th Edition. Principal imports: Calico ecrue, white calicos, printed calicos, black mercerized cotton satins, dress goods, white goods for clothing, all kinds of metals, iron bars, iron plates, steel, zinc.
- GRAMMONT & COX. Head office address, 5 Rue d'Adran, Saigon, Cochin China. Branch office addresses, Comptoirs Dufay & Gigandet, Marseille; E. Raoul-Duval & Co., Havre; Messrs. Mitsul Bussan Kaisha Ltd., China and Japan. Telegraphic address, Grammoco. Codes used. A. B. C. 5th, Scott's, Bentley's, Lieber's, A-1, Insurance & Maritime, private. Principal imports: Coal. all kinds of hardware, machinery, spirits, acids, leather, opium, automobiles, oils (lubricating and table), beers, chemical products. Principal exports: Rice, pepper, rubber, copra, fish grease, maize, cotton, all other colonial products.
- EUA MEAN EANCEUN LIONG, 93-94 Quai de Mytho. Chonlon, Cochin China. Principal imports: Cotton goods, sundries.
- SYMDICATE DES EXPORTATEURS SAIGON, Quaide de Belique, Saigon, Cochin China. Principal exports: Rice, maize, copra, cocoa.



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ALPRED STAREL & SOMS, 6th and C. Established, 1879.
Principal imports: Chinaware, house wares, cutlery.

## SAN FRANCISCO, U.S. A.

- ALBERS EROS. MILLING CO. Head office, Portland. Branch office, Seattle, Washington; San Francisco, California; Bellingham, Washington; Oakland, California; Spokane, Washington; Ogden, Utah; Los Angeles, California; New York; Kobe, Japan. General importers and exporters. With connections with importers and exporters in Dutch East Indies and Straits Settlements.
- ALPINE EVAPORATED CREAM CO., 268 Market St., San Francisco, Cal. Telegraphic address, "Alpinco." Codes used, all. Principal imports: None. Principal exports: Alpine Evaporated Milk—16 ounce size.
- AMERICAN ASIATIC TRADING CO. Head office address, 444 Market St., San Francisco. Branch office addresses, Kobe, Japan; Yokohama, Japan. Established, 1907. Telegraphic address, Haber. Codes used, A. B. C. and Bentley's, Western Union. Principal imports: All manufactured products of Japan, specializing in cotton goods and hosiery, underwear, composition and aluminum metal leaf, knitting machine needles. Principal exports: Chemicals, leather, lumber, glass, paper products.
- AMERICAN BROKERAGE COMPANY.. Head office, 112
  Market St., San Francisco. Branch office, 1120 L. C. Smith
  Bidg., Seattle. Telegraphic address, Ambroke. Codes
  used, Armsby, Western Union. Principal imports:
  Oriental beans, peanuts, oils, etc. Principal exports:
  Canned salmon, salt fish, evaporated milk, canned fruits
  and vegetables.
- THE AMERICAN IMPORT CO., 16 First St., San Francisco, Cal. Branch office addresses, Kobe, Japan; Manila, P. I.; New York, Chicago, St. Louis, St. Paul, Los Angeles, Cincinnati. Established, 1880. Telegraphic address, "Americimp." All codes used. Principal imports: Buttons, baskets, curios, cotton goods, hemp and straw braids, porcelains, art goods, silks, silk goods, etc. Philippine products. Principal exports: None. Bank references, Wells Fargo, Nevada National of San Francisco.
- AMERICAN JAPAN TRADING CO. Head office, 149 California St., San Francisco, Cal. Branch office, Osaka, Japan. Codes used, K. Iseri. Bank references, Sumitomo Bank, San Francisco, Yokohama Specie Bank, Yokohama. Importers of: Japanese manufactured goods. Exporters of: Iron and steel products, papers, tin plates and general merchandise.
- AMERICAN MERCANTILE CO., 510 Battery St. Established, 1900. Telegraphic address, Ammerco. Codes used, A. B. C. and 5th Edition, Leiber's, Western Union, Bentley's five-letter code. Principal imports: Sardines, mushrooms and other conserves. Principal exports: Iron and steel and California products.
- AMERICAN PACIFIC CO., 220 Montgomery, San Francisco, Cal. Cable address, 'Egelow." Codes used, A. B. C. 5th Edition improved, Western Union, Bentley's improved. Established, 1917. Branches, 25 Beaver St., New York., Antofagasta Iquique, Santiago, Valparaiso (Chile), Lima (Peru), Copenhagen. Bank references, Anglo & London, Paris National Bank, San Francisco, National City Bank of New York. Imports: Vegetable oils, food products, Oriental dry goods, raw materials. Exports: Mineral oil products, chemicals, iron and steel products, building materials, food products, general merchandise.
- AMERICAN TRADING COMPANY (Pacific Coast), 224
  California St., San Francisco, Cal. Branch office addresses, 2132 Pacific Ave., Tacoma, Wash.; 611 Maison Blanche Bldg., New Orleans, La. Telegraphic address, "Turnhand." All codes used. Principal imports: Copra, peanuts, peas and beans, rubber, spices, hardwoods, rice, sugar, Orlental oils, jute and jute goods, kapok, vanilla beans, silk piece goods, tin, matches, shellac and all other Orlental products. Principal exports: Lumber, grain, flour, canned and dried fruits and vegetables, canned fish and meats, chemicals, building and roofing materials, machinery, leather and tanning materials, oils and turpentine, nails, steel and iron of all kinds, pipe and boiler tubes, groceries, wines, and all the powerful products and manufactures of all kinds. Bank references: First National Bank of San Francisco, Hongkong and Shanghai Banking Corporation.
- D. C. ANDREWS, 485 California St., San Francisco, Cal. Established, 1884. Branch office addresses, New York, Chicago, Boston, Philadelphia, Buenos Aires. Bank references, Bank of Italy, San Francisco, Cal.; National City Bank, New York.

- A. O. ANDESEN & CO. (California), 244 California St. Established, 1917. Telegraphic address, "Pacao." Codes used, Bentley's, A. B. C. 5th Edition, improved, Western Union, Scott's 10th Edition. Principal imports: Rice, beans, rubber, copra, spices, oils, oil-seeds and all Oriental products. Principal exports: Steel and iron, tin plate, lumber, leather, canned goods and salmon, chemicals and dyes and general merchandise.
- ANTOINE CRIRIS CO., 1 Drumm St., San Francisco, Cal. Established, 1867. Telegraphic address, "Chiris S. F." Codes used, all. Essential oil manufacturers, general importing and exporting. Branch office addresses, Paris, France; Grasse, France; Cannes, France; Baus Roux, France; Baufarik, Algeria; Reggio, Calabria, Messina, Sicily, Comoro Islands; Cayenne, French Guiana; Tahiti, Society Islands; Asuncion, Paraguay; Chung-King, China; Chapa-Lao-Kay, Tonkin.
- GEO. ARMSTRONG, 319 Hobart Bidg., San Francisco, Cal. Principal exports: Steel storage tanks, machinery and oil refinery equipment. Bank references, Oakland Bank of Savings, Anglo-London and Paris National, San Francisco.
- Market St., San Francisco. Telegraphic address, "Amico." Codes used, A. B. C. 5th, Western Union, Bentley's, private. Principal imports: Raw materials of all descriptions among which are produce, oils, chemicals, manufactured goods such as crockery, (Chinese, Russian, refined) brushes, coir mats, enamelled ware. Principal exports: All American products, including steel, machinery, chemicals, paper, food stuffs, hardware, implements. Bank references, Anglo and London and Paris National Banks.
- ATKINE KROLL & CO., 260 California St., San Francisco, Cal. Established, 1906. Telegraphic address, "Atisco." Codes used, all. Principal imports: General. Principal exports: General. Branch office addresses, Guam, Marianos Islands; Zamboanga, P. I.
- THE BAILEY DRAKE COMPANY, 149 New Montgomery St., San Francisco, Cal. Telegraphic address, "Badra." Codes used, Western Union, A. B. C. 5th Edition. Principal imports: None. Principal exports: Automobile supplies, iron articles, engines, chemicals. Bank references: Anglo and London Paris National Bank of San Francisco.
- BALFOUR GUTHRIB & COMPANY. Head office, San Francisco. Branch offices, Seattle, Wash.; Tacoma, Wash.; Portland, Oregon; Los Angeles, Cal.; Vancouver, B. C., and Victoria, B. C. Established, 1869. Telegraphic address, Balfour. Codes used, A. B. C., Scott's. Principal imports: Oriental oils, seeds, pig tin, jute, gunnies, hemp, rubber, tea, shipbuilding materials, chemicals, copra, etc. Principal exports: Wheat, flour, oats, canned salmon, canned fruits, lumber, barley, etc.
- BARRIOS & COMPANY, 311 California St. Established, 1915. Telegraphic address, Obaco. Codes used, Lieber's, Bentley's, A. B. C. 5th improved, Armsby's. Principal imports: Rice, beans, peanuts, cottonseed cake. Principal exports: Canned fruits, canned salmon, paper. dried fruit, steel.
- BARUCE & CO. Head office address, 1205 Merchants Exchange, San Francisco. Branch office addresses, 79 Wall St., New York, and San Salvador, Rep. of Salvador, C. A. Established, 1887. Telegraphic address, Baruch. Codes used, Lieber's, Bentley's. Principal imports: Coffee and sugar. Principal exports: Flour, leather, petroleum, lubricating oils and gasoline.
- G. O. BASKAW CO., 24 California st., San Francisco, Cal. Established, 1906. Telegraphic address, "Cobco." Codes used, Bentley's. Principal imports: Beans, peas, canned goods, egg albumen, nuts, oils, Oriental products, peanuts, rice. Branch office addresses, Minneapolis, and St. Paul, Minn. Bank references, the Union State Bank, Minneapolis, Minn.; the American National Bank, San Francisco, Cal.
- E. E. BAXTER & CO., IMC. Established, 1917. Office, 24
  California St., San Francisco, Cal. Telegraphic address,
  "Gilmac." All codes used. Bank references, Croker National Bank, San Francisco. Importers of: Rice, oils,
  etc. Exporters of: Iron and steel, hardware, railway
  equipment, chemicals, canned goods and provisions, etc.
- EAY CHEMICAL WORKS, 24 California St., San Francisco, Cal. Established 1913. Principal exports, chemicals, soda ash, caustic soda. Bank references, Bank of Italy.
- BERNAED, JUDAE & COMPANY. Head office, 10-12 Broadway, New York City. Branches, Philadelphia, Pittsburgh. Chicago, San Francisco, Seattle and Paris. Ocean freight contractors, specialties in export shipping, financing and insurance. Get our rates and increase your business. Try our service and your goods will be there ahead of your competitors.



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References

First National Bank, Seattle, Wash.; Chamber of Commerce, Seattle, Wash.; Bradstreet's.

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Seattle, U.S.A.

- B. F. BEST & CO., 24 California St., San Francisco, Cal. Principal imports: Oils, beans, nuts. Principal exports: Steel products. Bank references, American National Bank of San Francisco.
- EXO CARBON COMPANY, 527 Pacific Bldg., San Francisco, manufacturers and exporters of arc light projection carbons and carbon goods for moving pictures and other lighting purposes, all sizes and kinds.
- BLAC LAC DISTRIBUTING CO., 205 Russ Bldg., San Francisco. Established, 1918. Telegraphic address, Blac Lac. Codes used, Western Union. Principal exports: Blac lac, ship paint, wood preservative, antifouling, proof, water proof and insulating paints. Bank references, Seaboard National Bank, San Francisco.
- ESTABLE CO., 960 Mission St., San Francisco, Cal. Established, 1869. Telegraphic address, "Boesch." Codes used, Western Union. Principal imports: Lamps, chimneys, wicks, metals (copper, brass, zinc). Brass and copper goods. Principal exports: Ship lamps, marine lamps, lanterns, household lamps, brass and copper stamped articles and spun articles of all kinds.
- BOED BBOS. & CO., 245 California St. Established, 1910. Telegraphic address, Bondage. Codes used, Bentley's, A. B. C. 5th Edition improved, Western Union. Principal imports: Cocoanut oil, soya bean oil, peanut oil, vegetable and animal fats, tapioca, sago and rubber. Principal exports: Steel products of every description, food products, baled newspapers, beer, provisions, typewriters, motor cars and sundry merchandise.
- BOWERS BUBBER WORKS. Established 1880. Office address, 68 Sacramento St., San Francisco, Cal. Branch office, 312 Occidental Ave., Seattle; 40 First St., Portland; 1010 A St., Tacoma; 220 S. Los Angeles St., Los Angeles, Telegraphic address, "Bowers." Codes used, A-1, A. B. C. 4th and 5th Edition, Bentley's, Western Union and Five Letter Edition. Bank references. First National Bank, San Francisco. Exporters of: Mechanical rubber goods, hose, belting and packing.
- P. A. BOYES & CO., 214 Front St., San Francisco, Cal. Established, 1911. Telegraphic address, "Pearlboyes." Codes used, A. B. C. 5th Edition. Principal imports: Coffee, hardwood. Principal exports: General. Bank references, Wells Fargo Nevada National Bank.
- ERAUN-EMECHT-HEIMANN CO., San Francisco, Cal. Established, 1852. Telegraphic address, "Braun drug." Importers and exporters, merchants of chemicals, heavy industrials, regents, laboratory apparatus for mines, universities, schools, sugar, soap, wine, breweries, tanners, oil refiners, iron and steel, soda ash, caustic soda, rosin, borax, acids, bicarbonate of soda, phenol, dyes.
- A. BRESLAMER, American National Bank Bidg. Established, 1905. Telegraphic address, Breslaner. Codes used, Western Union, A. B. C. Principal imports and exports, industrial chemicals and ores.
- EUCKINGHAM & HECET, 25 First St., San Francisco, Cal. Established, 1857. Telegraphic address, "Buckhecht." Principal imports: None. Principal exports: Boots, shoes, rubber footwear, "Buckhecht" brand shoes. Bank references, Anglo and London Paris National Bank of San Francisco, National City Bank of New York.
- BUBGER & CARTER COMPANY. Head office address, 17th and Mississippi Sts., San Francisco. Branch office addresses, Los Angeles, Cal.; Portland, Oregon; Seattle, Wash. Established, 1901. Telegraphic address, Carburco. Codes used, A. B. C. 5th edition, Western Union, Bentley's complete phrase, and private. Principal imports: Nothing special. Principal exports: Iron and steel products, food preserving, fruit packing and canning machinery and supplies; grain and cereal machinery and fertilizer equipments, machinists' tools and shop supplies.
- 48 California St., San Francisco, Cal. Offices throughout Australia, New Zealand, Pacific Islands and the East. Established, 1917. Telegraphic address, "Burns Philip Co." Codes used, Bentley's. Principal imports: Australian, Indian and Fastern merchandise, South Sea products. Principal exports: General merchandise of all descriptions. Bank references, Crocker National Bank, San Francisco.
- BUSE, BEACE & GEST, INC., Pacific Branch Hilbrook Bldg., San Francisco, Cal. Head office, 80 Maiden Lane, New York. Manufacturers and exporters of chemicals. Specializing in chloride of lime, soda ash, liquid chlorine, caustic soda, carbon terachloride, pottassium chlorate. Sole agents for Great Western Electro Chemical Co., Pittsburgh, Cal. A contract is a contract.
- CALIFORNIA PACIFIC TRADING CO., American National Bldg., San Francisco, Cal. Codes used, A. B. C. 5th edition, Western Union. Principal imports: General. Principal exports: General. Bank references, American National Bank of San Francisco.

- L. H. BUTCHER CO. Established, 1890. Head office, 341
  Montgomery St., San Francisco. Branch office, 631
  Spring St., Los Angeles, Cal. Telegraphic address,
  "Butcherco.' All standard codes used. Bank references.
  Anglo and London Paris National Bank. Exporters of
  chemicals, dyes, leads, glass or any products of manufacturers
- CALIFORNIA CAP COMPANY, 88 Bacon Bidg., Oakland. Cal., U. S. A. Cable address, Calcapco, Oakland. Codes A. B. C. 5th Edition (improved), Lieber's, Bentley's and Western Union. The oldest manufacturers of blasting detonators in America. Makers of the well known "California" brand blasting caps, electric detonators, delay action exploders and general blasting supplies. Uniform and dependable in all climates. Write us for descriptive booklets. Cable or mail inquiries will receive prompt and careful attention.
- CALIPORNIA COMMERCIAL EXPORT CO., INC., American National Bank Bldg., San Francisco, Cal. Established, 1918. Telegraphic address, "Calcomco." Codes used, A. B. C. 5th Edition, Bentley's, Western Union Principal imports: Vegetable oils, spices, copra, fibres, coffee, peanuts, beans, vanilla, M. O. P. shell. Principal exports: Wines and liquors, canned goods and groceries, textiles, plate and window glass, rubber goods, machinery, hardware, druggist sundries, chemicals.
- CALIPORNIA COTTON MILLS COMPANY, Oakland, Cal.
  Branch office address, 3036 Arcade Bidg., Seattle, Wash.
  Established, 1883. Telegraphic address, "Nottoc."
  Codes used, A. B. C. 5th edition, Universal. Principal
  imports: Cotton from China, jute from India. Principal
  exports: Cotton twines, crashes, towels, tablecloths,
  filter cloths, etc. Bank references, Bank of California,
  San Francisco and Seattle, Central National Bank, Oakland, Cal.
- CANERON BROS. & CO.. exporters and importers, 268
  Market St., San Francisco, U. S. A. Established, 1900.
  Telegraphic address, "Cameron." All codes used. Importers of all kinds of crude and raw materials, produce, etc. Exporters of canned asparagus and fruits; dried fruits and raisins and all Pacific Coast products, gasoline, kerosene, lubricating oils, marine gas engines and farm tractors. Bank references, Bank of California National Association.
- CATALYTIC CHEMICAL CO., INC. Established 1918. Head office, 17 Battery Place, New York. Branch offices, South San Francisco, Cal.; Crocker Bldg., San Francisco. Telegraphic address, "Catalytic." Codes used, Bentley's, Western Union. Bank references, Wells Fargo, Nevada National Bank, San Francisco.
- Fargo, Nevada National Bank, San Francisco.

  CENTRAL CONNEBCIAL CO., 560-562 Sacramento St., San Francisco, Cal. Established, 1905. Incorporated, 1915. Telegraphic address, "Kagawa." Codes used, A. B. C. 5th Edition, Western Union 5-letter, American, Bentley's Code, Armsby 1911 Edition, private codes. Principal exports: Adding machines, air drive motors, alcohol, automobiles and accessories, bottling supplies, California beans, cameras, canned abalones and sardines, carbon paper, bicycles and accessories, botts and nuts, bone, cash registers, chemicals, clothing, corks, drugs, dyestuffs, electrical supplies, emery, films, four, food colors, fountain pens, fruit (canned and dried), steel motors, motorcycles, nails and tacks, naval stores, paint, pencil sharpeners, pipe and tubes, rail (new and old), raisins, rubber goods, safety razors, Smith motor wheels, stationery, tin plate, typewriters, wine and wire. Principal imports: Agar-agar, beads, beans, peas, braid, bronze powder, brushes, buttons, canvas and duck, canned crab meat, celluloid articles, chloride of potash, challies, cotton goods, drugs and dyes, feathers, fish (canned and dried), insect flower and powder, knitted goods, knitting needles, lenses, licorice (root and extract), matches, menthol, olis (fish and vegetable), paints, paper, pencils, rice, sauce, sea goods, seeds, starch, toys, tumeric, walnuts, watch crystals. Branch office address, 28 Sanchome Edobori-Kitadori Nishiku, Osaka, Japan. Cable address, "Sera" Osaka. Bank references, Yokohama Specie Bank, Ltd.; Anglo London and Paris National Bank.
- W. B. CHAMBBELIN & CO., 912 Balboa Bldg., San Francisco, Cal. Established, 1900. Codes used, A. B. C. Principal imports: None. Principal exports: Lumber, fir lumber, redwood lumber, red cedar shingles, redwood shingles, posts, poles, pilings. Bank references, Wells Fargo, Nevada National Bank.
- CRIMA AGENCY & TRADING CO., INC. Head office address, 519 California St., San Francisco, Cal. Branch office address, No. 10 Queen's Road, Central Hongkong; No. 7 Kianger Road, Shanghai. Established, 1916. Telegraphic address, "Cato." Codes used, all codes, Principal imports: Vegetable oils, tapioca, tapioca flour, spices, rice, beans, peas, seeds, broom fibre (rattan, bamboos, palm fibre), bristles, rattan products. Principal exports: Iron and steel products, tin plate, etc. Bank references, Anglo and London Paris National Bank, San Francisco.

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- W. T. CLEVERDOM, Fife Bldg., San Francisco, Cal Established, 1904. Bank references, First National, San
- COAST POLDING PAPER BOX FACTORY CO., INC., 560 Mission St., San Francisco, Cal. Established, 1915. Principal exports: Cartons, folding paper boxes. Bank references, First National Bank, San Francisco, Cal.
- COMMERCIAL EXPORT COMPANY. Head office, 227 Balboa St., San Francisco. Branch office, Honolulu, T. H. Established, 1912. Telegraphic address, Commexco. Principal exports: Automobile supplies of all kinds, pneumatic and solid tires, insulated cables, electric bulbs.
- CONTINENTAL SALT & CREMICAL CO., I Drum St., San Francisco, Cal. Established 1900. Telegraphic address, "Consalt S. F." Codes used, W. W. Bentley, A. B. C. Principal exports: Salt. Branch office, Sydney, N. S. W. Bank references, First National Bank of San Francisco.
- A. J. & J. B. COOK, 743 Mission St., San Francisco, Cal. Established, 1907. Telegraphic address, "Cookbro," Codes used, A. B. C. 5th, Western Union, Bentley's. Principal exports: Leather.
- CORMYN & CAMERON, 24 California St., San Francisco.
  Established 1916. Telegraphic address, "Daycor."
  Codes used, Bentley's, Complete Phrase, Western Union,
  A. B. C. 5th edition. Principal imports: Rice, peanuts,
  soya beans, vegetable wax, peanut oil, soya bean oil,
  wood oil, peppermint oil, fish oils, kapok, tapicca seeds.
  etc. Principal exports: Petroleum products, iron and
  steel products, leather, machinery, chemicals, canned
- San Francisco, Cal. South American Agents: H. L. Vander Haas, Santiago, Chile, South America. Established 1859. Telegraphic address, "Cowell." Codes, Bentley's, Western Union. Principal exports: Lime, cement, building materials. Principal imports: None. Bank references, Wells Fargo Nevada National Bank, San Francisco.
- TROMAS DAY CO., 725 Mission St., San Francisco, Cal. Telegraphic address, "Dayco." Codes used, Western Union. Principal exports: Lighting fixtures. Bank references, Crocker and Wells Fargo.
- G. E. DE VEIES & COMPANY. Head office, Mills Bldg.
  Branch office, Arnhem, Holland; and Batavia, Java.
  Established, 1912. Telegraphic address, "Papyrus."
  Codes used, A. B. C., Bentley's Mercuur. Principal imports: Products from the Orient. Principal exports:
  Paper, machinery, chemicals, stationery and printers' supplies, California products, general merchandise.
- DILL-CROSETT, INC. Head office address, 23 Pine St., San Francisco. Branch office addresses, 100 YEDDO Marlio, Kobe, Japan; 45 John St., New York City; Homes-Laughlin Bidg., Los Angeles. Established, 1902. Telegraphic address, "Dill." Codes used, all. Principal imports: Vegetable oils, chemicals, copra, beans, peanuts, rice, potash products, potato flour, dextrine, albumen, silks, general merchandise from the Orient. Principal imports: Steel bars, wire, nails, miscellaneous metals, heavy chemicals, aniline dyes, drugs, industrial raw materials, leather, food products, general American merchandise.
- ALFRED W. DOW, 741 Call Bidg., San Francisco, Cal. Established 1918. Telegraphic address, "Aldow." Codes used, Bentley's. Bank references, Wells Fargo Nevada National Bank, San Francisco, Cal.
- J. T. DUNN COMPANY, 216 Pine St., San Francisco, Cal. Established, 1914. Cable address, "Whitecross." Codes used, all codes and private ones. Branch offices in Christiania, Norway, and New York, N. Y. Bank references, Wells Fargo Nevada National Bank. Exports: Kerosene, gasoline, oils, greases, leather, tanning materials, chemicals, spices, marine products, machinery, iron and steel, ship and boiler plates and tubes, auto trucks, etc. Imports: Wool, hides and skins, wheat, vegetable oils, linseed, perilla, China wood, cottonseed, etc., fibres, rattans, reeds, tanning materials, beans, coffee, peanuts, copra, kapok, leather, gunnies, Norwegian products generally. Exports: Tin plates, heavy chemicals, nalls, pharmaceuticals, drugs, lubricant oils, cement, gasoline, cotton and silk textiles, hosiery,
- DUREL & DODGE. Established 1916. Head office address. 255 California St., San Francisco, Cal. Branch office address, 111 Broadway, New York. Telegraphic address, "Dodu." Codes used, A. B. C. 5th Edition, Western Union, Bentley's, private. Bank references, Anglo London and Paris National Bank. Importers of: Peppers, copra, Tahit, vanilla beans, etc. Exporters of: General merchandise, caustic soda, iron and steel, canned goods, machinery of all kinds, dye colors, etc.

- G. C. BLAM & CO., 24 California St., San Francisco, Cal. Established, 1918. Codes used, Bentley's, Western Union, A. B. C. 5th Edition. Telegraphic address, "Grover Elam." Principal imports: All Oriental products. Principal exports: Steel, building material and chemicals. Bank references, Crocker National Bank.
- dress, 77-87 Battery St., San Francisco. Cal. Established 1851. Telegraphic address, "Arman." Codes used, any. Principal exports: Flannels, cotton, military and negligee shirts, Can't Bust 'Em Brand of men's and boys overalls, corduroy and work pants, machine coats, loggers' shirts, carpenters' aprons, kahki suits. Bank references, Anglo London Paris National, Wells Fargo.
- EMPIRE TRADING COMPANY, 544 Market St., San Francisco. Cal. Cable address. "Emptrad." Codes used, Bentley's. Imports: Vegetable oils, rice, vegetable wax, tallow. fish oils, peanuts, cheese, bristles, cotton and silk crepe, pearl buttons, all manufactures and products of the Orient.
- ESCHEM & MINOR CO., 24 California St., San Francisco, Established, 1893. Codes used, Western Union, Scott's 10th Edition. Bank references, Mercantile National Bank of San Francisco, Seaboard National Bank of San Francisco.
- PAGEOL MOTORS CO., 107th Ave. and Hollywood Blvd., Oakland, Cal. Established, 1916. Principal exports: 2, 3 ½ and 5-ton motor trucks and Fageol farm tractors. Bank references, Anglo London and Paris National Bank, San Francisco, Cal., and Commercial National Bank, Oakland, Cal. Seeking trade in all Pacific Coast countries as far as India.
- WALTER M. FIELD & CO., 260 California St., San Francisco, Cal. Established, 1906. Codes, used, Armsby, A. B. C. Principal imports: None. Principal exports: Canned fruits and vegetables and Monterey (California) sardines. Bank references: Anglo and London Paris National Bank.
- WM. PISKER & CO., 112 Market St. Established, 1912.
  Telegraphic address, "Fisherambo." Codes used, A. B.
  C. 4th and 5th, Lieber's Bentley's. Principal imports:
  Sugar, matches, spices, Oriental products. Principal
  exports: Provisions, iron and steel products, cottons,
  paints, oils, and general merchandise.
- ALLEN G. FREEMAN CO., 1 Drum St., San Francisco, Cal. Established, 1912. Telegraphic address, "Freeal." Codes used, W. W. Bentley's, A. B. C. Principal imports: Sugar beet seed. Bank references, Wells Fargo Nevada National Bank.
- W. & A. L. FRIEDMAN, 717 Market St., San Francisco, Cal. Established 1912. Telegraphic address, "Friedbros." Codes used, A. B. C. 5th Edition, Western Union. Principal exports: Oak sole leather, patent leather, calfskins, kid leathers, sheepskins, leathers for shoes, blackings and polishes, shoe pastes, fibre soles, rubber heels, shoe findings. We represent the largest and best tanneries and manufacturers in the United States. We are able to supply all American products, but specialize in the above. Our thorough purchasing experience enables us intelligently to interpret all specifications. References, Wells Fargo Nevada National Bank.
- W. P. FULLER & CO., San Francisco, Cal. Established, 1849. Manufacturers of pioneer white and red lead, colors, mixed paints, varnishes, mirrors, lubricating oils, jobbers of glass of every description, brushes, oils, etc.
- THE GENERAL COMMERCIAL CO. LTD. OF U. S., 311
  California St., San Francisco, Cal. Head office in Europe.
  General Commercial Co. Ltd., Copenhagen, Denmark.
  Established, 1918. Telegraphic address, "Alminko."
  Codes used, A. B. C., Bentley's, Lieber's. Principal imports: Japanese and other Oriental products. Principal exports: California products. Bank references, Wells
  Fargo Nevada National Bank, San Francisco; National
  City Bank, New York, N. Y.
- GILLESPIE & COMPANY, 461 Market St., San Francisco, Cal. Telegraphic address, "Darbyore." All codes used. Principal imports: Mineral oils, chemicals, beans, rice, copra, silk, manufactured specialties. Principal exports: Steel, drugs, chemicals, dyes, turpentine, rosin and manufactured goods. Bank references, American National Bank, San Francisco.
- GREGORY & COMPANY, 311 California St., San Francisco, Cal. Branch office address, Kobe, Japan. Established, 1917. Telegraphic address, "Atnoc.' Codes used, A. B. C. and Western Union. Principal imports: General imports, raw and manufactured products. Principal exports: Iron and steel products, machine tools, railway supplies, heavy chemicals. Bank references, American National, San Francisco, Cal.



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- GREAT BASTERN TRADING CO. Established, 1917. Head office, 24 California St., San Francisco. Branch office address, Bangkok, Slam, Hongkong, Shanghal, Vladivostok. Telegraphic address, "Gesdin." Codes used A. B. C. 5th and Bentley's. Bank references, Anglo and London Paris National Bank. General importers. General exporters.
- GREENEBAUM, WEIL & MICHELS. Head office address, 740 Mission St., San Francisco, Cal. Established, 1860. Telegraphic address, "Michels." Codes used, A. B. C. Principal exports: Men's overshirts, underwear, hosiery, blankets, comforters, bed spreads, suspenders, belts, handkerchiefs, night gowns, pajamas, men's pants. Bank references, Anglo London Paris National.
- P. GRIFFIN & CO. Head office, Yorkshire Bldg., Vancouver, B. C., San Francisco, Cal. Branch offices, 216 Colman Bldg., Seattle, Wash.; 341 Montgomery St., San Francisco, Cal.; 41 Oregon Bldg., Portland, Ore. Established, 1911. Telegraphic address, "Dragon" (all offices). Principal imports: Oriental produce. Principal exports: Metals, lumber, salmon, etc. Bank references, Bank of British North America, Vancouver; Ladd & Tilden Bank, Portland; British American Bank, San Francisco; Scandinavian American Bank, Seattle; Canadian Bank of Commerce, Seattle.
- GRIPFITH-DURBEY COMPANY, No. 1 Drumm St., San Francisco, Cal. Head office. Established, 1897. Telegraphic address, "Durney." Codes used, Bentley's, A. B. C. 5th edition, Western Union. Principal imports: Rice, cocoanut oils, peanuts, all Oriental goods on commission basis. Principal exports: Salmon, canned sardines, canned fruits, canned asparagus, canned pineapple, general goods. Bank references, Wells Fargo, Nevada National Bank.
- GUGGENHINE & COMPANY, 100 California St., San Francisco, Cal. Branch office addresses, ten packing houses all over California. Established, 1897. Telegraphic address, "Fleish." Codes used, Bentley's, A. B. C. 5th Edition, Western Union, Lieber's, private. Principal imports: Dried fruits, honey, nuts, raisins.
- HENRY W. GUTTE & CO., 260 California St., San Francisco, Cal. General importers and exporters.
- H. & M. COMPANY, INC., 516 Call Bldg., San Francisco, Cal. Established, 1912. Telegraphic address, "Hammacco." All codes used. Principal imports: Carbon papers for special manifest sizes, typewriters, pencils, or pen and ink use, carbon rolls all widths for autographic requisites and billing typewriters wound single, duplicate or triplicate in all standard colors. Ribbons for all makes of standard typewriters and for the "multigraph" or other duplicating machines, mimeograph inks. "Ribbon Life Moistener" for remoistening and extending use 100 per cent to 300 per cent of ribbons for all standard typewriters.
- HAKALAU PLANTATION COMPANY. Head office address, 22 Battery St., Room 408, San Francisco, Cal. Established, 1882. Telegraphic address, "Thomas." Codes used, Western Union. Principal imports: Sugar. Bank references, any bank.
- THE HALE CO., 16 California St., San Francisco, Cal. Established, 1912. Cable address, "Halco." All codes used. Branch office at Kobe, Japan. Bank references, American National Bank and Seaboard National Bank. Importers of: Beans, peanuts, walnuts, canned crab, peas, seeds and olls. Exporters of: Groceries and provisions, iron, steel, and produces thereof, chemicals, rosin, hardware, wines, etc.
- E. C. HALL & CO., 593 Market St., San Francisco, Cal. Established, 1903. Codes used, Western Union. Principal exports: Steel, storage tanks, ralls, machinery, marine and contractors' equipment, vegetable and mineral oils, plants. Branch office address, 1512 Smith Bldg., Seattle, Wash. Bank references, Crocker National Bank, National Bank of Commerce, Seattle.
- HAMMER & COMPANY, 310 Clay St. Established, 1862.
  Telegraphic address, "Hammer.' Codes used, A. B. C.,
  Western Union, Armsby, Bentley's, Robinson, private.
  Principal imports: Rice, heans, cereals, walnuts, peanuts, vegetable oils, fish oils, copra, coffee, kapok, spices,
  general produce, dried peas, maize, pearl shells, dried
  fish, shrimps, shark fins, crude rubber. Principal exports: Flour, grain, beans, hops, coffee, canned salmon,
  California sardines, provisions, cheese, dried fruits,
  canned fruits and vegetables, fresh fruits and vegetables, onions, produce, wines, paper, dry goods, hardware, kerosene, gasoline, lubricating oils, paints, lumber.
- HAMMOND LUMBER COMPANY. Head office address, 260
  California St., San Francisco. Branch office addresses,
  Astoria, Oregon; Eureka, Cal. Telegraphic addresse,
  "Hamlumco." Codes used, A. B. C. 5th Edition, Western
  Union. Principal exports: Douglas fir, spruce, California redwood, sashes, doors, millwork, piling, lath,
  shingles.

- M. M. HABFORD, 16 California St., San Francisco, Cal. Principal exports: Steel bars, structurals, plates, nails, wire, tin plate, tacks, rivets, etc. Bank references, American National Bank.
- A. C. HARPER & CO., LTD. Head office address, Kuala Lumpur, Fed. Malay States. Branch office addresses, Klang, Port Swettenham, Port Dickson, Seremban. Codes used, A. B. C. 4th and 5th, Bentley's. Principal exports: Purchasing agents and shippers of every description of manufactures and supplies.
- EXARDES, LUMA CO., 24 California St., San Francisco, Cal. Established, 1918. Codes used, A. B. C. 5th Edition. Imports: Raw products, oil, rubber, chemicals, spices, fertilizer, copra, vanilla, guano, sisal, beans, coffee, hemp, Mexican hardwoods, etc. Exports: Flour, salmon, canned goods, dried fruit, machetes, hardware, sack needles, drugs, dry goods, machinery, shoes, motor vehicles and supplies, paints, groceries, etc.
- HARRON, RICKARD & M'CONE, 139-149 Townsend St., San Francisco, Cal. Established, 1875. Cable address, "Airdrill." Exporters of machinery, small, tools, hardware, supplies for machine shops, shipyards, garages, boiler shop, steel and iron forge shops, saw mills, planing mills, box factories, etc.
- THE HASLETT WAREHOUSE CO. Established, 1898.
  Head office address, 228 Pine St., San Francisco, Cal.
  Telegraphic address, "Haslett." Bank references, all
  San Francisco banks. Does general merchandise storage business, customs bonded, internal revenue bonded
  and free warehouses, including forwarding, cartage,
  public weighing, pool car distribution, operating grain
  and bean cleaner and drier.
- J. B. HAVEE & CO., 1023 Kohl Bldg., San Francisco, Cal. Established 1898. Telegraphic address, "Ervah." Codes used, A. B. C. 5th Edition, Lieber's, Western Union, A-1, A. B. C. 5th Edition improved, Bentley's. Principal imports: Hemp, tobacco, cigars, copra, sugar, rice, oils, peanuts, etc. Principal exports: Flour, canned goods, provisions, rope, shoes and general merchandise. Bank references, Wells Fargo Nevada National Bank, Hongkong and Shanghai Banking Corporation.
- D. HECHT & CO., 320 Market St., San Francisco, Cal. Telegraphic address, "Dunhecht." All codes used. Principal imports: Coffee, sugar, rubber, hides, balsam, etc. Principal exports: Almost everything. Bank references, Anglo London and Paris Bank.
- E. M. HRIFEMAN SONS, 130 Bush St., San Francisco, Cal. Established, 1866. Telegraphic address, "Heincote." Codes used, Western Union. Principal exports: Men's neckwear, suspenders, garters for men, women and children, armbands. Bank references, Seaboard National Bank.
- GEO. EERRHAMN COMPANY, 300 Front St. Established. 1890. Telegraphic address, "Bliss." Codes used: Western Union. Principal exports: Hops in bales and cases, anhydrous ammonia, aqua ammonia 260, Solvay 75% calcium chloride, solid and granulated; extracts and flavors for the manufacture of liquor and for uses of confectioners and soda water manufacturers, canned fruits and vegetables.
- ARTHUE H. HERTS, 112 Market St., San Francisco. Established, 1908. Telegraphic address, "Arthur Herts." Codes used, A. B. C. 5th, Western Union. Principal exports: New and rebuilt autos and motor trucks, tires, auto accessories, garage and auto machine shop supplies. Bank references, Merchants National Bank, San Francisco.
- HIMD ROLPH & CO. Head office address, 230 California St., San Francisco. Branch office, Honolulu, T. H. Established, 1898. Telegraphic address, "Rolph." Codes used, Bentley's, A. B. C. 4th and 5th editions, A-1, Scott's, Watkin's, Western Union. Principal imports: Rice, coffee, copra, tea, oils, seeds, peanuts, beans, tapiocas, spices and other important Oriental products. Principal exports: Flour, lumber, steel, canned goods and other important manufactured and raw products of the United States.
- E. CLEMENS HORST CO. Head office address, 235 Pine St., San Francisco, Cal. Branch office addresses, Chicago, London, New York. Established, 1918. Telegraphic address, "Clemhorst." Use all codes. General importers. Principal exports: Horst's evaporated vegetables, hops, barley, malt, general. Bank references, Dun's, any bank.
- NULE & BOLTON. Head office address, 244 California St., San Francisco, Cal. Established, 1918. Telegraphic address, "Alexton." Codes used, Bentley's, A. B. C. 5th. Imports: (Business) import and export commission merchants and brokers. Specializing in cocoanut oil, soya bean oil, China wood oil, peanut oil, fish oil, copra, Oriental products. Exports: Export orders executed on a commission basis. Bank references, First National Bank of San Francisco.



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- HUTCHINSON SUGAR PLANTATION COMPANY. Head office address, 22 Battery St., San Francisco, Cal., Room 408. Established, 1889. Telegraphic address, "Thomas." Codes used. Western Union. Principal imports: Sugar Bank references, any bank.
- HYLAND BAG COMPANY, 243 Sacramento St., San Francisco, Cal. Telegraphic address, "Mangrove." All codes used. Importers, manufacturers and dealers in bags, burlap and twine. Bank references, Wells Fargo Nevada National.
- INDEPENDENT TRADING COMPANY, Agents, Independent Iron and Steel Co., general importers and exporters, 24 California St., San Francisco, Cal. Cable address, Independent Trading. All codes used. Principal exports: Iron and steel products, chemicals, dyestuffs, rebuilt automobiles, rebuilt typewriters, baled newspapers, galvanized and black sheets, wire rods, nails, wire shorts, etc. Principal imports: Fish and vegetable oils, peanuts, seeds, beans, copra, tea, rice, jute, tallow, lards, kapok, cocoanut oil.
- INE RIBBON MPG. CO., 635 Howard St., San Francisco, Cal. Established, 1909. Cable address, "Nobbirkni." All codes. Bank references, Wells Fargo National and Anglo London and Paris. Exporters of: Writing ink, stamping inks, paste, mucilage, typewriter ribbons, carbon papers.
- TRE C. B. JENNINGS COMPANY, 24 California St., San Francisco, Cal. Representatives wanted in Oriental markets. Principal imports: Rice, oils, beans. Principal exports: Foodstuffs, strapping iron, steel products. Bank references, Anglo and London Paris National Bank, San Francisco, Cal.
- A. W. V. JOHNSON, Merchant's Exchange Bldg., San Francisco, Cal. Principal imports: Oriental raw products. Principal exports: Oxygen apparatus, high pressure steel clyinders, valves, complete oxygen plants, safety apparatus of all kinds, oxy-acetylene cutting and welding apparatus, diving outfits, ever-warm safety-suits, industrial chemicals, redio-rem outfits. Bank references, American National Bank of San Francisco.
- THE JOHNSON LOCKE MER. CO., 1 Drumm St., San Francisco, Cal. Established, 1889. Telegraphic address, "Locke." Codes used, Armsby, Lieber's, Bentley's, Principal imports: Copra, beans, peanuts, oils. Branch office, Sacramento, Cal.; Salt Lake, Utah. Bank references, Bank of California, N. A., San Francisco, Cal.
- 8. L. JONES & CO., IMC., Importers and Exporters. Established 1847. Head office, No. 209 California St., San Francisco, Cal. Universal cable address, "Redbois." All codes. Branch offices: Colman Bidg., Seattle, Wash.; Hongkong, Shanghai, China; Kobe, Japan. Importers of all kinds of crude and raw materials, produce, etc., from all foreign countries. Exporters of all crude and raw materials, produce, manufactured goods, food products, iron, steel, chemicals, etc.
- **EAAS-HOPEIRS COMPANY**, Hearst Bldg., San Francisco, Cal. Principal imports: None. Principal exports: Paper, glassine, vegetable parchment, grease-proof, book labels, glazed brush, ledger, flats, cover, M. S. wrapping, etc. Bank references, Wells Fargo Nevada National Bank of San Francisco.
- 8. KADOOKA. Head office, 510 Battery St. Branch offices, Kohe, Yokohama, Tokyo, Osaka, Vancouver, B. C. Established 1910. Telegraphic address, "Skadooka." Codes used, A. B. C. 5th Edition, Bentiey's, Western Union. Principal imports: Rice, beans, seeds, peas, peanuts, cereal flours, wax chillies, etc. Principal exports: Steel products, lumber, marine products, building materials, industrial, chemicals, etc.
- ETLAUEA SUGAE PLANTATION COMPANY. Head office address, 22 Battery St., Room 408, San Francisco, Cal. Established, 1899. Telegraphic address, "Thomas." Codes used, Western Union. Principal imports: Sugar Bank references, any bank.
- EXAPP & BAXTER, IMC., 210 California St., San Francisco. New York office, suite, 1742-30 Church St. Codes, A. B. C. 5th Edition. Western Union Universal, Western Union 5-letter, Bentley's and Excelsior. Cable address, "Knappberco." Offices, Shanghai, Yokohama, Manila, Agencies, Java. Export agents, William Cluff Co., and Zellerbach Paper Co. Principal exports: Iron and steel articles, chemicals, provisions, paper, leather, paints and oils, dyes, etc. Imports: All Oriental products.

- KULLMAN SALE & CO., INC., 608 Wells Fargo Bidg., San Francisco, Cal. Branch office addresses, 220 W. Lake St., Chicago, Ill.; 88 Fulton St., New York, N. Y. Established, 1880. Telegraphic address, "Kulmansals." Codes used, Western Union, 5th edition, private codes. Principal imports: None. Principal exports: Sole leather, tanning extract.
- LANGLEY & MICHAELS CO., 42-60 First St., San Francisco, Cal. Established 1850. Telegraphic address, 'Langley." Codes used, Bentley's, A. B. C. 5th Edition, Western Union. Principal exports: Drugs, chemicals, patent medicines, druggist sundries, toilet preparations, extracts, rubber goods, pharmaceutical and surgical supplies, peroxide of hydrogen, soda fountains and supplies, druggists glassware. Special attention to manufacturing and laboratory specialties. Principal imports: None. Bank references, Crocker National Bank, San Francisco, Cal.
- LANSING COMPANY, 338-348 Brannan, San Francisco Cal.
  U. S. A. Established, 1881. Telegraphic address, "Quolansing." Codes used, 4th and 5th Edition, Western Union. Principal exports: Concrete mixers, wheelbarrows, warehouse trucks, casters, cast iron wheels, car wheels and axles, hoists, gasoline and hoisting engines, lumber trucks, steel scrapers, hand carts, etc. Bank references, Wells Fargo Nevada National Bank, San Francisco, Cal.
- LASTRETO & CO., 260 California St., San Francisco, Cal. Established 1876. Telegraphic address, "Lastreto." Codes used, all standard (and private). Principal imports: Coffee, hides, hardwood, cocoa, ores and metal, tropical fruits, silks, matting, rice. Principal exports: All California and Pacific Coast products and Oriental imports. Bank references, Anglo London Paris, National Francisco, Cal.
- ESTABLE EQUIPMENT COMPANY, INC., 126 Pine St. Established, 1906. Telegraphic address, "Lecum." Codes used, Western Union (universal and 5-letter).
- LEWIS-SIMAS-JOWES COMPANY, 429 Davis St. Established 1906. Telegraphic address, "Obaco." Principal imports: Rice, beans, cottonseed cake and spices.
- LLATA, LOWEBBEG & SCHLEGEL, IMC. Head office for Orient, 544 Market St., San Francisco. Executive offices, 80 and 84 Wall St., New York City. Cable address, "Oakheart." Importers and exporters, pharmaceuticals and drugs, crude drugs, dye materials and dry colors, essential oils, oils and waxes, Oriental raw products, silks and cotton crepes, Oriental manufactures of every description.
- W. LOAIRA & COMPANY, 22 Battery St., San Francisco Cal. Established, 1875. Telegraphic address, "Loaira." Codes used, A. B. C. and 5th, Lleber's, Sampers. Principal imports: Hides, coffee, sisal, sea products, seesame seed and general Mexican products. Principal exports: General lines. Bank references, Anglo London and Paris National Bank of San Francisco, Cal.
- MACONDRAY & COMPANY, 149 California St. Established 1849. Codes used, usual. Cable address, "Macondray." Principal imports: Teas. Principal exports: Coffee, leather, chemicals, dried fruits, manufactured steel and iron. Agencies, Alliance Insurance Co., London; Sea Insurance Co., Liverpool; Federal Insurance Co., New Jersey; Imperial Marine Transport of Tokyo.
- MAILLIARD & SCHMIEDBLL. Head office address, 230
  California St., San Francisco, Cal. Branch office address, 941 E. Fourth St., Los Angeles, Cal. Established, 1897. Telegraphic address, "MacLaren." Codes used, A. B. C. 5th Edition. Principal imports: Sardines, mushrooms, peas, currants, herring and mackerel. Principal exports: Sardines, chemicals, dyes and intermediates. paraffin wax and rosin. Bank references, The Bank of California, N. A., San Francisco, Cal.; Irving National Bank, New York.
- MARINS PRODUCE COMPANY, 310-320 Davis St. Established, 1906. Telegraphic address. "Makins." Codes used, A. B. C. 5th Edition. Western Union and Bentley's. Principal imports: Butter, eggs, cheese, frozen egg meats, dried eggs, honey. poultry and general produce. Principal exports: Butter, eggs, cheese and general produce.
- MALDONADO & CO., IMC., 37 California St., San Francisco.
  Cal. Branch office addresses, Mexico. Central and South
  America. Established, 1903. Telegraphic address, "Maldonado." Principal imports and exports are general
  merchandise. Bank references, American National Bank.
- MARTIMS GARDNER COMPANY, 260 California St.. San Francisco, Cal. Established, 1916. Telegraphic address, "Margarco." All codes used. Principal imports: Vegetable olls, Oriental products. Principal exports: Steel products, electrical apparatus, machinery of all kinds, chemicals. Bank references, Anglo and London Paris National, Hongkong and Shanghai Corporation.

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ROSARIO, and BAHIA BLANCA.

- CHAS. B. M'CORMICK & COMPANY, 1 Drumm St., San Francisco, Cal. Established, 1903. Telegraphic address, "McCormick." Principal imports: None. Prinipal exports: Lumber, ties and piling, general shipping coastwise and foreign. Branch office address, Portland, San Diego, Los Angeles. Bank references, Wells Fargo Nevada National Bank.
- Established, 1914. Telegraphic address, "Macdo." Codes used, all codes. Branch office, 37 Liberty St., New York, N. Y. Principal imports: Oils, rubber, spices, raw products, beans, copra, dried egg, tallow. Principal exports: Steel and iron products, machinery, hardware, paper, canned and dried fruits, fish, seeds, wines. Bank references, Bank of California, America National Bank.
- MICHEL-BILODEAU CHEMICAL CO., INC., 658 Howard St., San Francisco, Cal. Established, 1915. Principal imports: Essential oils, manganese. Principal exports: Bichromate of potash, permanganate of potash, perfumery, dyestuffs. Bank references, Anglo London and Paris National Bank of San Francisco.
- CHARLES MILKE & CO., 802 American National Bank, San Francisco, Cal. Established, 1918. Cable address, "Chasmilne." Codes used, A. B. C. 5th edition, Bentley's, Western Union. Bank references, American National Bank, San Francisco, Cal. Importers of: Raw material, foreign food products of all kinds. Exporters of food products of all kinds.
- T. MIWA COMPANY, 24 California St., San Francisco. Cable address, "Miwa," San Francisco. Exports: Steel products, tinplate, nails, chemicals, dyestuffs. Imports: canned fish, beans, seeds, oils, general Japanese products, ores, chemicals.
- M'KAY & COMPANY, Home office address, 311 California St., San Francisco. Branch office address, Eureka, Cal. Established, 1874. Principal exports: Redwood lumber.
- A. E. M'HAINS & CO. Established, 1910. Telegraphic address, "Brokerage." Codes used, Bentley's, Western Union and Armsby's. Principal imports: All vegetable and fish oils, beans, peas, spices, iodine, essential oils, peanuts, tapioca and flour sago and flour rice and flour chemicals. Principal exports: All soda products and all heavy chemicals, food products, canned fruit and vegetables, dried fruit and vegetables, canned salmon and other fish.
- MOORE PERGUSON & CO., 244 California St., San Francisco, Cal. Established, 1868. Telegraphic address, "Mooreferg." Codes used, Western Union. Principal imports: Grain bags. Principal exports: Grain and flour. Bank references, Bank of California, N. A.
- GEO. A. MOORE & CO., 212 California St., San Francisco, Cal. Established, 1850. Telegraphic address, "Gamoor." All codes used. Principal imports: Jute bags and burlaps, coffee, cocoa, cocoanuts, copra, condiments, fertilizers, hardware, hides, skins, metals, oils, pearls, shells, rubber, spices, kapok, vanilla beans, silks, rice, pearl buttons, crude feathers and downs, and domestic manufacturers agents. Principal exports: Grain, flour, dried and canned fruits and vegetables, hardware, machinery, lumber, salmon and canned fish, chemicals, petroleum products. Operating south Sea Line of sailing vessels to South Sea Islands, Australia, New Zealand and Philippines. Bank references, any mercantile agency or bank.
- MOORHEAD BADIO CORPORATION, 519 Call Bldg., San Francisco, Cal. Principal imports: None. Principal exports: Manufacturers of wireless, telephone and telegraph apparatus, supplying Moorhead wireless Telegraph, valves, to the Allied Government.
- TARMER PACKING CO. Established, 1895. Head office address, Spear & Harrison Sts., San Francisco, Cal. Telegraphic address, "Peterson." Codes used, Armsby's, A. B. C. 4th and 5th Edition, Western Union. Bank references, The Canadian Bank of Commerce. Exporters of canned salmon.
- Cal. Head office, 2B Kiangse Road, Shanghai, China. Branch office, 265 Fifth Ave., New York. Established 1918. Cable address, "Nile Rheims." Codes used, Bentley's, A. B. C. Principal imports: Silk, wool, pongee, oil, rice, peanuts, walnuts, albumen, egg yolk, seeds, beans, bristles, straw, grass, flour, human hair, antimony. Principal exports: Steel, dye colors, chemicals, machinery, cotton and woolen goods, electrical goods, paper, food products.
- O. NORDMAN & CO. Head office, 320 Market St., San Francisco. Branch office, Papeete, Tahiti. Established, 1916. Telegraphic address, "Norico." Codes used, A. B. C. 5th Edition, Bentley's, Western Union. Principal imports: Copra, vegetable oils, fibres, vanilla beans. Principal exports: Groceries, hardware, textiles, druggists, sundies.

- Front St., San Francisco. Established, 1907. Telegraphic address, "Noramerco." Codes used, A. B. C. 5th Edition, A. B. C. 5th edition improved, Western Union, Bentley's, Scott's 10th Edition, J. K. Armsby's, Lieber's and private codes. Principal imports: Canned crab, canned shrimps, canned tuna, canned salmon and all kinds of canned goods, provisions, beans, bean cakes, bean oil, peanuts, rice, grain, seeds, feeds, fertilizers, chemicals, drugs, toys, baskets, matting, crockery, curios, cotton goods, etc. Principal exports: Steel and iron products, tinplates, hides, leather, paper, agricultural implements, instruments, all kinds of machinery and engines, drugs, chemicals, dyestuffs, dried fruits and other agricultural products, etc.
- CHAS. E. MOWELL CO., 152 Front St., San Francisco, Cal. Established, 1912. Telegraphic address, "Nowell." Codes used, A. B. C. 5th Edition, Bentley's Lieber's, Western Union. Principal imports: Linens, straw and hemp hat braids, coffee, rice, sugar, beans, peas, hardwood, castor beans, oils, copra and jute bags. Principal exports: Dry goods, hardware, cutlery, dairy and farm implements, foods, cereals, paper, furniture, liquors, chemicals, fruits, honey, and shoes.
- NOSAKI BROTHERS. Head office address, 112 Market St., San Francisco, Cal. Branch office address, 621 Broadway, New York City. Established, 1907. Telegraphic address, "Nozaki." Codes used, A. B. C. 5th, Bentiley's, Western Union. Principal imports: Peanuts, beans, canned crab, braid, hemp, straw, chip and millnery goods, etc. Principal exports: Leather, chemicals, dyestuffs, steel and iron goods, tanning materials, paper, naval stores, etc.
- O'COMMOR-HARRISON & GUTTE, 149 California St. Established, 1852. Telegraphic address, "Conno." Codes used, all codes including private. Principal imports: All Oriental and Java and Straits Settlements produce as well as coffee and other Mexican and Central American produce. Principal exports: General merchardise, iron and steel, California products, textiles, and manufactured goods, including machinery, etc.
- OHASHI IMPORTING COMPANY, 339-41-43 Commercial St., San Francisco, Cal. Established 1910. Telegraphic address, "Ohashi." Codes used, Bentley's, A. B. C. 5th Edition. Principal imports: General merchandise. Principal exports: Chemicals and steel. Bank references, Yokohama Specie Bank, San Francisco.
- ORIENTAL PRODUCTS CO. Head office, 25 California St., San Francisco Cal. Branch office, Kobe, Japan. Established, 1917. Telegraphic address, "Amplesso." Codes used, Bentley's, A. B. C. 5th and private. Principal imports: Beans, peas, rice and peanuts. Principal exports: Steel products, chemicals.
- OTIS, M'ALLISTER & CO., 310 California St., San Francisco, Cal. Established, 1892. Telegraphic address, "Alisbe." Codes used, all commercial. Principal imports: All Oriental, Australasian, Mexican, Central and South American products. Principal exports: Lumber, metals, chemicals, fruits, foodstuffs, etc. Indent merchants. Bank references, Bank of California, N. A.
- OVERSEAS FACTORS. Established, 1898. Address, 236
  Commercial St., San Francisco. All codes used. Furnished with Letters of Credit. Importers of: Food products. Exporters of food products, especially California canned and dried vegetables and fruits, and wines and
- PAAUHAU SUGAR PLANTATION COMPANY. Head office address, 22 Battery St., Room 408. Established, 1899. Telegraphic address, "Thomas." Codes used, Western Union. Principal imports: Sugar. Bank references: Any bank.
- PACIFIC AMERICAN TRADING CO. Head office address, 12 Market St., San Francisco. Branch office addresses, Soerabaia, Java, D. E. I. Shidzuoka, Japan. Established, 1901. Telegraphic address, "Energy." Codes used, A. B. C. 5th Edition, Western Union, Bentley's and others. Principal imports: Tea, spices, coffee, albumen, egg yolk, nuts, beans, copra, vanilla beans, Yucca gum, Pongee silk. Principal exports: American products and manufactured goods, beer, canned, preserved and dried fruits and fish.
- PACIFIC COAST STEEL COMPANY. General office, Rialto Bldg., San Francisco, Cal. Seattle, San Francisco cable address, "Coasteel." Open hearth products, Shapes Manufactured: Bolt rods, rivet rods, wire rods. Billets for Forging: Bands, flats, plain squares, plain rounds, square and round corrugated bars for reinforcing, square twisted bars for reinforcing. Angles: Equal and unequal legs.
- PACIFIC COAST SYRUP CO., 721 Sansome St., San Francisco, Cal. Branch office address, Seattle, Wash.; Portland, Ore. Telegraphic address, "Teagarden." Codes used, Western Union. Principal exports: Jam, jelly, preserves, honey, mince meat, apple butter, syrup and molasses.



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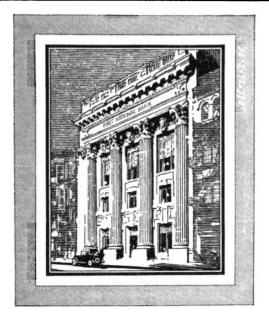
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- PACIFIC FIRE EXTINGUISMED CO., 424-440 Howard St., San Francisco, Cal. Established, 1895. Branch offices, Los Angeles, Cal.; Portland, Oregon; Seattle, Wash. Cable address, "Pacfirex." Bank references, Crocker National Bank, San Francisco, Cal.; Scandinavian-American Bank, Seattle, Wash.
- PACIFIC MOTOR SUPPLY CO., 1438 Market St., San Francisco, Cal. Branches, Los Angeles. Distributors of "Indian Motorcycles," bicycles and parts.
- PACIFIC OBJECT CO., 16 California St., San Francisco, Cal. Branch office address, Tientsin, China. Established, 1903. Telegraphic address, "Cowen." All codes used when permitted by cable censor. Principal imports: Natural products from the Orient. Principal exports: Metals, steel, iron, chemicals, dyestuffs, leather and general United States products. Bank references, American National Bank, Anglo and London Paris National Bank, International Banking Corporation.
- PACIFIC PRONOGRAPH SUPPLY CO., 2 Golden Gate Ave. Principal exports: Phonographs and supplies. Bank references, Anglo California Trust Co.
- THE PACIFIC PIPE CO., 201 Howard St., San Francisco, Cal. Exporters of new and used steam tested and guaranteed pipe and light screw casing, boiler tubes, valves and fittings.
- PACIFIC TRADING CO., 331-343 Battery St., San Francisco, Cal. Established, 1906. Telegraphic address, "Pactrad." Codes used, Bentley's, A. B. C. 5th Edition. Principal imports: Rice, potato starch, crab meat, matches, codfish, stockfish, beans, oil of all kinds, etc. Principal exports: Steel and iron products, dyestuffs, chemicals, drugs, tinplate, etc. Branch office addresses, Yokohama, Kobe, Tokyo, Osaka, Japan. Bank references, Yokohama Specie Bank, San Francisco.
- PACIFIC WESTERN COMMERCIAL CO., 149 California St., San Francisco, Cal. Branch office address, 7 Harima Machi, Kobe, Japan. Established, 1913. Telegraphic address, "Pawesco." Codes used, Bentley's, A. B. C. 5th Edition. Principal imports: General. Principal exports: General.
- PARRETT & COMPANY. Head office, San Francisco, Cal. Branch office, Los Angeles, Cal.: Portland, Oregon; Senttle, Tacoma, Spokane, Wash. Established, 1853. Telegraphic address, "Parrot." Codes used, all codes. Principal imports: General. Principal exports: General. Bank references, Bank of California.
- PASCAL, DUBEDAT & CO. Head office, 36 California St., San Francisco, Cal. Branch office, Bordeaux, France, Established, 1863. Telegraphic address, "Pasdat." Codes used, A. B. C. 5th Edition. Principal imports: French wines, brandies, liquors and groceries.
- PAYNE SALES COMPANY, 112 Market St., San Francisco, Cal. Canneries located at Mantico and Healdsburg, Cal. Principal imports: Canners of California fruit and vegetables. Established, 1916. Bank references, American National Bank of San Francisco and Healdsburg National Bank, Healdsburg, Cal.
- W. A. PLUMBER MFG. CO., 37 Front St., San Francisco, Cal. Branch office address, Los Angeles. Principal imports: Burlaps and bags. Principal exports: Canvas goods, tents, tarpaulins, etc.
- B. C. PORTEE. Head office, 805 Fifi Bldg., San Francisco, Cal. Established, 1909. Codes used, Western Union. Principal exports: Machinery, saw mill, power plants, transmission, pumps, boilers, gas engines, ship equipment, Bank references, Donohur Kelly Banking Corporation and Seaboard National Bank.
- w. PRESCOTT. Head office, 519 California St., San Francisco. Branch offices in Shanghai and, Hongkong China. Telegraphic address, "Cottpres." Codes used, Western Union, Bentley's, A. B. C. 5th. Principal imports: China crude bed feathers, China fancy feathers, pongee and pearl buttons. Principal exports: Steel, chemicals, piece goods, paints, provisions, general sundries.
- ERID BROS., INC., Sacramento and Drumm Sts., San Francisco, Cal. Telegraphic address, "Reibro." Codes used, Bentley's, A. B. C. 5th Edition, Western Union. Principal exports: Hospital supplies, cotton, surgical instruments, catgut, white enamelware, rubber goods, etc. Bank references, Wells Fargo Nevada National Bank.
- ROBERT ROMER & CO. Head office, 110 Bush St., San Francisco. Branch offices, Shanghai, China; Vladivostok; Kobe, Japan. Established, 1892. Codes used, Bentley's, Western Union, and Western Union five-letter code. Principal imports: Vegetable oils, wax and tallow, hemp and wool and all kinds Oriental beans, medical herb roots, etc., bags and bagging, flax and flax tow, flax seed, and various other sundries. Principal exports: Iron and steel, glassware, hardware, California wines and brandies, whiskey.

- Cal. Established, 1913. Cable address, "Patnoble."
  Codes used, Bentley's, Western Union, A. B. C. 5th Edition. Branch offices, Colman Bldg., Seattle, Wash.; Spalding Bldg., Portland, Oregon; American Bank Bldg., Los Angeles; Chicago, New York. Bank references, Anglo London & Paris National Bank, San Francisco, Bank of California, Seattle, Wash. Principal imports: General Oriental products, tea, beans, oil, peanuts, walnuts, egg products. Exports Steel, soap, chemicals, glass, machinery, etc.
- THE BOMAN PAINT CO., INC. General offices, 55 New Montgomery St., San Francisco, Cal. Established, 1912. Factory at San Francisco. Cable address, "Romanco." Code used, A. B. C., Western Union. Principal exports: Paints, oils, varnishes, wood or plaster, fibre wall board. Our lines work well together. References, Bank of Italy.
- POSEMBERG BROS. & CO., 344 California St., San Francisco, Cal. Established, 1904. Telegraphic address, "Rosenberg." All standard codes used. Principal imports: Rice, beans, walnuts. apricot kernels, honey, beeswax. Principal exports: Dried fruits, figs, raisins, walnuts, almonds, apricot kernels, honey, beeswax, rice and beans.
- E. ROSENBLATT, 157 California St. Established, 1900. Codes used, A. B. C. 5th Edition, Lieber's Bentley's. Armsby's. Principal imports: Rice, peanuts, beans, oil. Principal exports: Salmon.
- s. ROSENBLUM, 85 Second St., San Francisco, Cal. Established, 20 years. Telegraphic address, "Rosenbros." Codes used, Lieber's, A. B. C. Commission brokers. Principal exports: Coffee.
- PAUL R. EUBER & CO., 16 California St., San Francisco, Cal. Telegraphic address, "Paulrube." Codes used, Armsby's, A. B. C. 5th Edition, Bentley's. Principal imports: General. Principal exports: General. Bank references, Anglo and London Paris National Bank.
- A. C. RULOPSON CO., 357-365 Monadnock Bldg., San Francisco. Pacific Coast Sales Managers, Pittsburgh Steel Co., wire nails, standard wire products, steel hoops and bands; Brier Hill Steel Co., blue and galvanized sheets and tank plates; National Chain Co., chain and ship cables; Twisted Wire & Steel Co., box strapping. Exporters of iron and steel products. Export business invited exclusively from foreign houses having authorized agents in United States. Branch offices, Portland, Seattle, Los Angeles.
- SAN PRANCISCO IBON & METAL CO., 256 N. Pont St., San Francisco, Cal. Established, 1907. Telegraphic address, "Harry Silberman." Codes used, Western Union and Bentley's. Principal exports: Railroad equipment. Bank references, Anglo London Paris National Bank, San Francisco, Cal.
- SAN FRANCISCO TRADING CORP., 235 Montgomery St., San Francisco, Cal. Established, 1917. Cable address, "Hymans." Codes, A. B. C. 5th Edition, Bentley's, private. Branch office, Nieuwe Have 120, Rotterdam, Holland. Bank references, Anglo London Paris National Bank, San Francisco, Cal. Importers of: Copra, peanut oil, cocoanut oil, rubber, tea, tobacco, taploca, etc. Exporters of: Machinery and tools, cotton and cotton goods.
- W. S. SCAMMELL & CO., 603 No. 1 Drumm St., San Francisco, Cal. Telegraphic address, "Scammell." Codes used, A. B. C. 5th Edition.
- SCHUEL & CO., 16 California St., San Francisco, Cal. Established, 1911. Telegraphic address, "Gillian." Codes used, all. Principal exports: Dried fruits, canned fruits, canned salmon, canned sardines, honey, beans. Branch office addresses, New York, 100 Hudson St.; Seattle, Wash., 1112 L. C. Smith Bldg.; Los Angeles, Citizens National Bank Bldg.
- A. SCHUMANN & CO., 216 Pine St. Established, 1915. Telegraphic address, "Schumann." Codes used, A. B. C. 5th Edition, Armsby, Bentley's. Principal imports: Rice, beans, seeds, hardwood, lumber and logs. Principal exports: Rice.
- SCHWARTE BROTHERS. Head office, 319 Sansome St., San Francisco. Branch office, Guatemala City, Guatemala, C. A. Established, 1871. Telegraphic address, "Schwartz." Codes used, Bentley's, Lieber's, Western Union, Commercial Telegraph and Cable code, A. B. C. and private codes. Principal imports: Coffee, cocoa, sugar, rice, hides, rubber, etc. Principal exports: Machinery, provisions, rice and general merchandise.
- THE SIBERIAN CO, LTD. Established, 1910. Head office, U. S. A.—311 California St., San Francisco, Cal. Head office Europe—Siberia Co., Ltd., Copenhagen, Denmark. Established, 1904. Branch office addresses, Siberian Co. Ltd., Moscow, Petrograd, Vladivostok, Kabari, and other cities in Russia and Siberia.



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Indemnity Mutual Marine Assurance Company, Ltd.

United States Lloyds, Etc.

- Francisco, Cal. Telegraphic address, "Seshipco." Codes used, all codes. Branch office, Seaboard Shipping Co., Inc., 25 Beaver St., New York City. Principal imports: Custom House Work, forwarding. Principal exports: Freight forwarding to all parts of the world. Forwarding, exporting. Bank references, Wells Fargo Nevada National Bank, San Francisco, Cal.
- JOHN C. SIEGFRIED & CO., 268 Market St., San Francisco, Cal. Established, 1894. Telegraphic address, "Siegfried." Codes used, Armsby, Bentley's, A. B. C. 5th Edition. Branch office, 326 W. Madison St., Chicago, Ill. P. O. B. 4 Shidznaka, Japan. Principal imports: Peanuts, nuts, beans, peas, seeds, spices, feathers, canned crab, raw materials. Principal exports: Iron, steel, machinery, hardware, automobiles, chemicals, dyes, roofing and building material, canned goods, etc. Bank references, Bank of Italy, San Francisco.
- C. HEMBY SMITH, 311 California St., San Francisco, Cal. Established 1908. Telegraphic address, "Chenryinc." Codes used, A. B. C. 5th Edition, Bentley's, Lieber's, Scott's Imp., Western Union. Principal imports: Rice, beans, oils, peas, nuts, copra, hemp, hardwood, teas and spices. Principal exports: Case oil, rice, beans, lumber, iron and steel products, acids and chemicals, tinned fish, lubricating and fuel oils, paraffin wax. Branch office addresses, 411 Arctic Bidg., Seattle, Wash. Bank refererences, Bank of Italy, San Francisco, Cal.; Scandinavian Trust New York.
- C. SOLOMON, JR. Head office, 314 Battery, San Francisco. Branch offices, Chicago, 1112 Harris Trust Bldg.; New York, 12 Park Row; Manila, Harbin; Hongkong, Hongkong Hotel; Kobe. Established, 1889. Telegraphic address, Urso. Codes used, all. Principal imports: Oils, ores, beans, silks, cotton, general merchandise, cigars. Principal exports: Iron, steel, chemicals, drugs, automobiles, hardware, specialties.
- EWD. L. SOULE Co., iron and steel products. Established, 1906. Rialto Bldg., San Francisco, U. S. A. Telegraphic address, "Souleco." All codes used. Mill agents and jobbers for iron and steel rounds, squares, flats, angles and special shapes, concrete reinforcements, hoops, bands, plates, sheet tin and terne plate, bolts, nuts, rivets, nails, pipe, tubing, wire, rails, forgings, etc.
- PREDERICE W. SPENCER, 356 Market St., San Francisco, Cal. Established, 1914. Cable address, "Livewire." Codes used, A. B. C. 4th and 5th Editions. Importers of: Cocoa beans, crude rubber, sugars. Exporters of: Cocoa beans.
- STEALING POSTER & COMPANY, San Francisco, Cal. Established, 1915. Telegraphic address, "Sterfoster." All codes used. Principal imports: Oriental products. Principal exports: American products. Bank references, Bank of Italy, San Francisco.
- D. S. STERN CO., 46 Davis St., San Francisco, Cal. Branch office address, Hongkong, China. Established, 1914. Telegraphic address, "Sternco." Codes used, Bentley's, A. B. C. 5th and others. Principal imports: Rice, beans, peanuts, vegetable oils, spices. Principal exports: Paper, iron and steel products. Bank references, American National Bank of San Francisco; Bank of Italy, San Francisco; Irving National Bank, New York; Nederlandisch, Indische Handelsbank, Hongkong, and any bank of San Francisco or Hongkong.
- EDMUND TAYLOR & SON, 682 Mission. Established, 1887.
  Principal imports, linens and cottons. Handkerchiefs, towels, crashes, table linens, art linens. Principal exports handkerchiefs.
- A. P. THAME & CO. Established 1911. Head office, Hobart Bldg.. San Francisco, U. S. A. Cable address, "Thane." All standard codes. Branch offices, New York, London, Liverpool, Havana, Shanghai. Principal exports: Lumber (all Pacific species), heavy hardware and plumbers' supplies, iron and steel products, wire and wire products, aniline dyes, chemicals, soda ash, caustic soda, cils, tallow, paraffine wax, kerosene, canned and dried fruits, canned vegetables, canned and salted fish, milk, foodstuffs, electrical equipment, machinery, engines and supplies, railroad equipment, tin, terne plate, leather, rosin, quicksilver, paper, wood pulp, cotton piece goods. Principal imports: Vegetable and fish offs, copra, tallow, gums, tanning materials, fibres (broom and furniture), bristles, dessicated cocoanut, eggs and egg products, nuts, spices, tapiocas, rice, rubber, kapok, burlap, antimony, tin, wolfram, beans, peas, seeds. Bank references. ('rocker National Bank, San Francisco. Correspondence solicited. Send us your inquiries.
- A. E. S. TROMPSON & CO., Merchants Exchange, San Francisco, Cal. Head office, 5 Szechuen Road, Shanghai, China. Telegraphic address, "Sheptard." Principal imports: General lines. Principal exports: General lines. Bank references. Wells Fargo Nevada National Bank, Hongkong and Shanghai Bank.

- FREDERICK E. THOMPSON CO., 210 Drumm St., San Francisco. Established, 1915. Telegraphic address, "Margfred." Codes used, Western Union, Lieber's, A. B. C. 4th and 5th, Bentley's. Purchasing agents and shippers of every description of manufactures and supplies.
- TUBES CORDAGE COMPANY, 406 Montgomery St., San Francisco, Cal. Established, 1856. Telegraphic address, "Tubbs." Codes used, Western Union, Bentley's, five-letter. Principal imports: Hemp. Principal exports: Rope. Bank references, Bank of California. Wells Fargo Nevada National Bank, Anglo London and Paris.
- UNION ASERTOS AND RUBBER COMPANY, 548 Call Bldg., San Francisco, Cal. Branch office, Chicago. All codes used. Principal imports: None. Principal exports: Asbestos. Bank references, Wells Fargo Nevada National Bank.
- UNITED COMMERCIAL COMPANY, Crocker Bldg., San Francisco, Cal. Machinery, factory and R. R. equipment. Relaying steel rails, ties and timbers. Warehouse and yard, South San Francisco. Codes used, A.
- UNITED SUPPLY COMPANY, 346-348 Clay St., San Francisco, Cal. Established, 1917. Telegraphic address, "Wilmeirold." Codes used, A. B. C., Western Union. Bentley's. Principal imports: None. Principal exports: Food products, iron, steel, hardware, drugs, chemicals, manufactured and raw materials, general exports. Bank references, Wells Fargo Nevada National Bank.
- 8. E. VAN GEUNS & CO., 268 Market St. Telegraphic address, "Vanceuns." Codes used, A. B. C. 5th Edition, Bentley's, Western Union. Principal imports: Copra, nutmegs, spices, hides, rice, oils. Principal exports: Steel and iron, paper, old newspapers, canned salmon, sardines, fruits, paints, chemicals, rosin, explosives, stationery, etc.
- E. L. VAN WINKLE CO. (Successors to I. S. Van Winkle & Co., Established, 1849), 160 Beale St., San Francisco, Cal. Cable address, "Vanwinkle." Codes, A. B. C. 5th Edition. Exporters of iron and steel products, bars, angles, plates, sheets, wire rods, hoops, bands, pipe, fittings, nuts, bolts, rivets, washers, tool and drill steel, hollow drill steel, rails, locomotives, frogs, switches, nutlocks, wire, nails, barbed wire and fencing, shafting, etc. "Dreadnought" high speed steel and high speed tool bits, heat treated ready for use. Correspondence invited.
- FRANK L. WARNER. Head office address, 608 Merchants' Exchange, San Francisco, Cal. Established, 1906. Telegraphic address, "Frankwar." Codes used, all. Principal imports: Food products, kapok, copra, etc. Principal exports: Food products. Bank references, Bank of California.
- G. WEISSBAUM & CO., Pipe works, 131 Eleventh St., San Francisco, offer 2,300 tons 35 lb. steel rail conforming to U. S. Standard section A. S. C. E. with the necessary splice bars, bolts, track splkes; also standard gauge flat car trucks, three locomotives, other railroad equipment at Nome, Alaska. Also 5,000 tons new 40 pound steel rail, U. S. Standard A. S. C. E. at Acapulco, Mexico.
- CHAS. E. WELCE COMPANY. Head office, 214 San Francisco, Cal. Established, 1916. Telegraphic address, "Charwel." Codes used. all. Principal imports: China rice, beans, oil, chillies, peanuts, etc. Principal exports: All lines. Bank references, Bank of Italy, Mercantile National Bank, San Francisco.
- W. T. WELIECH & CO., INC., 230 California St., San Francisco, Cal. Established, 1905. Telegraphic address, "Welisch." Codes used, A. B. C. 5th (Imp.), Western Union (Imp), Bentley's, Scott's 10th, R. M. G., private. Principal imports: Rice. Principal exports: Rice. Branch office addresses all over the world. Bank references, Bank of California, N. A., American National Bank, San Francisco; National City Bank of New York.
- WESTERN ASBESTOS MAGNESIA COMPANY, 25-27 South Park, San Francisco, Cal. Established, 1908, continuation of Dearmon & Co., established 1890. Cable codes, private and Western Union, Bankers, Anglo and London Paris National Bank.
- THE WESTERN JUNE CO., 563 Seventh St., San Francisco, Cal. Established, 1906. Bank references. Italian American Bank. Exporters of: Baled newspapers, rags, bottles, sacks, iron, metal and rubber.
- Cisco, Cal. Branch office, 8 Bridge St., New York, N. Y. Established 1870. Telegraphic address, "Kaimana." Codes used, A. B. C. 5th Edition. Principal imports: Sugar, copra, vanilla, beans, hides, garbanzos, etc. Principal exports. All United States' manufactures and products. Bank references, Bank of California, Mechanics Metals National Bank of New York.

F. A. FREDERICK

E. C. METZGER

# Frederick & Metzger

#### **INSURANCE BROKERS**

318-323 Mutual Life Building SEATTLE, WASHINGTON, U. S. A.

Marine Fire Automobile

Seattle References By Permission

Bank of California Mitsui & Company, Ltd. Cho Ito & Company Frank Waterhouse & Company

# Furukawa Shoji Kabushiki Kaisha

### Importers and Exporters

Capital - - - Yen 10,000,000

Commodities dealt in

"F. M." Electrolytic Ingots, "Marugata" Ingots, Copper and Brass Sheets and Ribbons, Copper and Brass Rods and Bars, Wire Bar and Wire Rods, Insulated Wires and Cables, Gold and Silver Bullion, Lead, Spelter, Tin, Sulphate of Copper, Coal, Machineries, Electrical Wares, Manure, Sundry Goods, etc.

FURUKAWA & CO., Ltd.

#### Directors

Toranosuke Furukawa, President Manjiro Yoshimura, Chief Director Mototaro Ogino Teiji Inouye Koji Inouye Kisaburo Yamaguchi Reinosuke Suga

#### Head Office:

YAESUCHO, KOJIMACHI-KU, TOKYO

#### Cable Address:

"FURUKAWA TOKYO"

#### Branches and Representatives:

Tokyo, Osaka, Moji, Kobe, Nagoya, Hakata, Seoul, Dairen, Shanghai, Hankow, Hongkong, New York, London, Paris, Rome, Bombay, Calcutta, Singapore, Buenos Aires, Etc., Etc.

- WIGHTMAN & CRANE, 461 Market St. Established, 1904.
  Telegraphic address, "Wightman." Codes used, A. B. C.
  5th Edition, Bentley's, Everybody's pocket code, Modern Economy, Western Union. Principal imports: Copra, cocoanut oil, pearl shell, vanilla beans. Principal exports: Hardware, groceries, iron and steel, dry goods, paints and oils, furnishing goods, chandlery, fresh and dried fruits, electrical goods, machinery, automobiles, automobile accessories, gas engines, rubber goods; in short, American goods of all classes.
- willies a patterson, 1 Drumm St., San Francisco, Cal. Telegraphic address, "Chaswill." Codes used, A. B. C. 5th, Lieber's, Cross, Robinson, Yopp, Western Union, Bentley's. Principal imports: Vegetable oils of all kinds, cocoanut, soya bean, cotton seed, peanut, castor, wood oil, animal, and fish oils in barrels and bulk, tallow, greases, etc., beans, peas, coffee, rice, sugar, copra, rubber, linseed and other cakes. Principal exports: Oil expelling machinery, steel, bars and sheets, rosin, turpentine, linseed oil, caustic soda, soda ash, tallow, etc., all kinds of hardware, black and galvanized pipe, copper and brass, sheets, wire, dyes, chemicals, and all American manufactured products. Branch office addresses, Manila, P. I.; Shanghai, China; Seattle, Wash.; Portland, Ore.; Los Angeles, Cal. Bank references, First National Bank, San Francisco, Cal.
- WILSON STREL PRODUCTS COMPANY. Head office address, San Francisco, Cal. Branch office address, Mill, Chicago, Ill. Established 20 years. Principal exports: Wire nails, rivets, tacks, mattress wire. Bank references, Seaboard National Bank, San Francisco, any Chicago bank.
- WILSON-WELCE COMPANY. Head office address, 214
  Front St. Established, 1918. Telegraphic address,
  "Charwel." Codes used, all. Principal imports: Vegetable oils, rice, beans, egg yolks, albumen, copra, tapicca,
  peanuts, cocoa, spices. Principal exports: Canned fruits,
  vegetables, fish, paper, chemicals, tin plates, iron and
  steel. Bank references, Bank of Italy.
- WIEARD ELECTRIC LAMP CO., 147 New Montgomery St., San Francisco. Established, 1910. Telegraphic address, "Varqu." Codes used, Western Union. Principal exports: Portable electric lamps. Bank references, American National Bank, San Francisco.
- WORLEY-MARTIN COMPANY, 617 Montgomery St., San Francisco, Cal. Telegraphic address, "Worley." Codes used, Bentley's, A. B. C. 5th Edition. Importers of: Wool, hides, skins, tallow, peanuts, pepper, oils and all Oriental products. Exporters of hardware, steel and steel products, drugs, specialties, and all manufactured products. Representation in Tientsin, Peking, Shanghai, Hankow, Canton and Hongkong. Also representation in Japan. Manufacturers desiring to introduce their lines will find our representatives to be progressive, dependable and responsible.
- ELLEBBACH PAPER CO., 534 Battery St., San Francisco. Branch offices, Oakland, Fresno, Los Angeles, San Diego. Established, 1869. Telegraphic address, "Zellerbach." Codes used, Bentley's, A. B. C. 5th, Western Union. Principal imports and exports: Paper of all kinds and its products. References, Mechanics & Metals Bank, New York City; Wells Fargo, Nevada; Anglo London and Paris; Dun, Bradstreet.

#### **SEATTLE**

- CORP., Smith Bldg., Seattle, Wash. Cable, address, "Horne," Seattle; "Ameic," Oriental ports. All codes. Exporters, engineers, manufacturers' representatives. All American products including steel for shipbuilding and manufacturing, wire and nails, railroad equipment, locomotive cranes, complete machine tools, electric motors, power plant equipment, agriculturals, autos and accessories, complete stocks drugs and chemicals, leathers, hardware, tools, canned salmon and milk, lumber, machinery of all descriptions.
- AMERICAN ORIENTAL SALES CORP., 1703 Smith Bidg., Seattle, Wash. Est., 1919. Telegraphic address, "Amorsaco." Codes used, Bentley's, Western Union 5 letter. Bank references: Canadian Bank of Commerce. Imports: Beans, peas, rice, raw materials, matches, oils, cocoanut, hen egg, albumen and yoke, crab meat. Exports: Canned fruits and vegetables, dried fruit, canned salmon, milk, lumber, chemicals, rosin, paper, machinery, steel products.
- AMERICAN TABLE SAUCE CO., 1717 L. C. Smith Bidg., Seattle, Wash. Branch office address, 58-57 W. 23rd St., New York, N. Y. Established. 1917. Telegraphic address, "Yasutaro, Kawakaini." Principal imports: Soya beans, vegetable oils, porcelain ware, peanuts. Principal exports: Bollers, steel, iron, automobiles, food products of all kinds. Bank references, Seattle National and Yokohama Specie Bank.

- BELDBH & IVES, IMC, 216 White Bldg., Seattle, Wash. Established, 1919. Cable address, "Belive." Bank references: National Bank of Commerce, Seattle, Wash. Exports: Fir, spruce, hemlock, red cedar, lumber and shingles.
- GEVAM COMMERCIAL CO. Established, 1917. Head office, 705-710 Arctic Bidg., Seattle. Branch office, 6 A Klanger Road, Shanghai, 328-339 T. Pinpin, Manila, P. I.; No. 1 A Charter Road, Hongkong; No. 167 Yokohama. All codes used. Telegraphic address, "Chicom Co." Bank references, National Bank of Commerce. General importers. General exporters.
- CLOSSET & DEVERS. Head office, 317 Second Ave., So., Seattle, Wash. Branch office, Portland, Oregon. Established, 1909. Telegraphic address, "Closset & Devers." Codes used, Western Union, Standard Coffee codes. Principal imports: Green coffee, teas, whole spices, vanilla beans.
- COX-WEITE CO., 405 Alaska Bldg., Seattle, Wash. Established, 1917. Telegraphic address, "Coxwhite." Codes used, A. B. C., Western Union. Principal imports: All classes of raw materials. Principal exports: Iron and steel products, machinery, raw material, etc., folded newspapers. Bank references, Scandinavian American Bank
- Wash. Cable address, "Crateco." Codes used, Bentley's, Western Union 5th edition. Branches, 24 California St.. San Francisco, Cal. Bank references: National Bank of Commerce, Seattle, Wash. Imports: Bristles (Chinese & Russlan). Exports: Dry colors, turpentine, rosin, paints, linoleum, roofings.
- THE DISTER LIST CO., IEC., L. C. Smith Building, Seattle. Wash. Branch office addresses, Canadian offices, C. E. Disher & Co., Ltd., Vancouver, Victoria, Calgary. Telegraphic address, "Disher." Codes used, Bentley's, Western Union, A. B. C. 5th Edition, Yopp's. Principal imports: Beans, peas, rice, peanuts, sulphur, tapicca, cocoanut, animal and vegetable oils, tallow. spices, peppers, Australian products, copra, etc. Principal exports: Salmon, steel and steel products, chemicals, fertilizers, etc. Bank references: Canadian Bank of Commerce.
- FEDERAL COMPENSED MILE Co., 511 Hoge Bldg., Seattle, Wash. Established 1917. Codes used, Western Union. Principal imports: None. Principal exports: Evaporated milk only. Bank references: National City and National bank of Commerce.
- E. FUEUYA CO. Head office, 216 2nd Ave., So. Seattle, Washington. Branch offices, Tacoma, Portland, Vancouver, B. C., Yokohama and Kobe, Japan. Established, 1892. Telegraphic address, Furuya. Codes used, Western Union, A. B. C. 4th and 5th improved, and Bentley's. Principal imports: Beans, peanuts, rice, seeds, potato starch, agar-agar, ginger, oils, wax, canned crab, salmon, and other canned food, potash, chemicals, manganese ore, sulphur, graphite and carbon electrodes, safety matches, silk goods, cotton crepe, table cloth, toys porcelains, curios, etc. Principal exports: Steel, iron bar, angles, ball bearings, bands, plates, sheets, pipe, saws, nails, wire, tin plate, grinding wheel and other machinery; bicromate soda, nitrate soda, caustic soda, soda ash, prussiate soda, carbonate soda, dye and dye stuff, paper, leather, etc.
- GENERAL SOILERS COMPANY, 2021 L. C. Smith Bldg., Seattle, Wash. Established, 1917. Telegraphic address, same. Principal imports: None. Principal exports: Boilers and tanks. Bank references: Scandinavian-American Bank, Seattle; Puget Sound Bank & Trust Co., Tacoma, Wash.
- GERSIX MANUFACTURING COMPANY, 2819-28 Fifth Ave., South, Seattle, Wash. Established, 1916. Principal imports: None. Principal exports: Automobile trucks. Bank references: National Bank of Commerce.
- A. H. HANKERSON & CO., Arctic Bldg. Telegraphic address, Hankco. Codes used, A. B. C. 5th, Universal, Robinson's, Peycke's, Special. Principal exports: Flour.
- E. EIRADE COMPANY. Established 1900. Head office address, 522 Jackson St., Seattle, Wash. Branch office address, Yokohoma and Kobe. Telegraphic address, "Hirade." Codes used, Bentley's and A. B. C. 5th. Bank references, National Bank of Commerce, The Yokohama Specie Bank. Importers of all kinds of Japanese products and merchandise. Exporters of tin plate, wire nails, files, dyes, soda ashes, etc.
- RORACE J. HOLLEY & COMPANY, 409 Hoge Bldg. Seattle, Wash. Branch office addresses working connections throughout the United States, close connections in Chicago and New York. Principal imports: Animal, vegetable and fish oils, seed oils, seeds, canned and smoked fish. Principal exports: Steel, chemicals, canned goods, etc. Bank references: Bank of California, First National Bank, Seattle.



# Glen Line Eastern Agencies Ltd.

STEAMSHIP & INSURANCE AGENTS . FREIGHT & PASSAGE AGENTS

Glen Line, Ltd., London or Royal Mail Steam Packet Co., London "Shire" Line, London Royal Insurance Co., Ltd., Liverpool

REGULAR SAILINGS between

JAPAN, CHINA, and UNITED KINGDOM PORTS VIA SUEZ

- **EXECUTE:** MARUFACTURING CO., Seattle Wash. Established, 1918. Bank references: National Bank of Commerce. Exports: Washboards, kitchen and laundry woodenware.
- INTERNATIONAL TRADING CO. Temporary office 1927
  L. C. Smith Bldg., Seattle. Established 1918. Telegraphic address, "International Trading." Codes used, Bentley's. References until organization is completed, R. K. Dykes, manager L. C. Smith Bldg.; C. R. Roy, manager Roy & Roy Mill Co. Imports: Hardwood. Exports: All grades Pacific Coast Lumber, including fir veneer, posts, poles, etc.
- E. JAMES COMPANY, 405 Pioneer Bldg., Seattle, Wash. Established 1898. Telegraphic address, "James." Codes used A. B. C. 5th edition, Western Union. Principal imports: General merchandise from Orient and India. Principal exports: Lumber, box shooks, canned goods and iron and steel products. Bank references, National City Bank, Seattle, Wash.
- E. P. JAMISON CO., 1810 L. C. Smith Bldg. Principal exports: Iron and steel products, machinery.
- JAMES G. JONES, 620 4th Ave., Seattle, Wash. Principal imports: Jams, gums, honey, eucalyptus, etc. Bank references, Bank of California.
- RELLEY, CLARKE CO., Seattle, Wash. Branch office addresses, San Francisco, New York, Los Angeles, Tacoma, Spokane, Portland, Vancouver, B. C., Boise. Established, 1900. Telegraphic address, "Kelclar." Codes used, Armsby, A. B. C. 4th and 5th, Al., Western Union. Principal imports: Peanuts, coccanut, copra, oils, beans, rice, spices and all kinds of produce. Principal exports: Canned goods. Bank references, Bank of California.
- ELLEOURNE & CLARK MPG. CO., 24 West Connecticut St., Seattle, Wash. Branch office addresses, 1209 Life Bldg., San Francisco, Cal.
- E. B. MOGOVERN COMPANY, 1120 L. C. Smith Bldg., Seattle, Wash. Established 1917. Codes used, Armsby. Principal imports: Beans, rice, peanuts. Principal exports: Canned salmon, fruits and vegetables. Bank references, National Bank of Commerce, Seattle, Wash.
- MITSUI & CO., LTD. Importers and exporters. Seattle office, American Bank Bldg. Head office, Tokyo, Japan.
- **EXAMPLY MFG. COMPANY, 318** 2nd Ave., South, Seattle, Wash. Established 1918. Principal imports: Pig-iron. Principal exports: Tackle blocks. Bank references, National Bank of Commerce.
- MELEK TRADING COMPANY, Hoge Bldg., Seattle. Established, 1918. Telegraphic address, "Neleh Trading." Codes used, Western Union, A-1, Private. Principal imports: Native products, Japan and China. Principal exports: Iron and steel, machinery, metals, cotton goods, hardware, plumbing fixtures, lighting fixtures, motors, clothing. Bank references, Scandinavian American Bank, Seattle.
- WORTH PACIFIC TRADING CO., 1327 Smith Bldg., Seattle, Wash. Established 1918. Bank references, Seattle National Rank, American Trust & Savings Bank. Importers of copra, hides, rice, vegetable oil, peanuts, fertilizers, matches and hemp, coffee, tea, rubber, etc. Exporters of nails, railway supplies, steel goods products, box strapping, nails-less box strapping, lumber and heavy machinery, etc.
- WORTEWEST LEAD COMPANY, 1744 4th Ave., So., Seattle, Wash. Principal imports: None. Principal exports: Lead. Bank references, National Bank of Commerce.
- Seattle, Wash. Branch office addresses, Dashwood House, London; 7 Kaigan Dori, Kobe, Japan; Woolworth Bldg., New York; Marine Insurance Bldg., Tokyo, Japan; 7 Hotel Mansions, Honkong, China; Merchants Loan and Trust Bldg., Chicago, Ill.; 202 Sansome St., San Francisco, Cal. Telegraphic address, "Nortraco." All codes used. Principal imports: Rice, peanuts, beans, oils, silk, gunnies, burlaps, wolfram. Principal exports: All iron and steel products, rails, nails, bars, sheets, plates, angles, pipe, wire, railway supplies, tin plate, chemicals, machine tools.
- ORIENTAL AMERICAN COMMERCIAL CORPORATION, 301 Alaska Bldg., Seattle, Wash. Established 1917. Telegraphic address, Harry Vogt. Codes used, Bentley, Western Union. Principal exports: Steel products, machinery, plumbing supplies, waterworks, materials, pipe, fittings, valves, bollers, tools, lumber, asbestos (crude and fibre). Branch office address, Tori Club Bldg., Uchissaiwaicho, Kojimachi-Ku.
- ORIENTAL TRADING CO., 214 5th Ave., So. Established 1897. Codes used, Bentley's. Principal imports: All commodities.

- THE OVERSHAS CORPORATION, LTD. Head office address, 562 First Ave., So., Seattle; branch office addresses, Yokohama, Kobe, Nagoya, Japan; Hongkong and Shanghal, China. Established 1910. Telegraphic address. Overseas, Seattle. Codes used, Bentley's, A. B. C. 5th edition improved, Western Union universal edition, Western Union 5 letter edition. Principal imports: Chinaware, grass rugs, baskets, boxes for confectioners, flashlights, buttons, silk goods. Principal exports: Iron and steel products, tools, silver plated tableware.
- PACIFIC IMPORTING CO. Head office, 1528 Third Ave.. Seattle, Wash. Branch offices, 202-6 Fifth Avenue Bldg., New York City: Yokohama, Japan; Kobe, Japan. Established 1909. Telegraphic address, Kore. Codes used. Western Union. Principal imports: Cotton piece goods, lunch cloths, toweling, cotton wearing apparel and manufactured cotton goods, buttons, paper products, slippers, vacuum bottles, surgical instruments, porcelain, earthenware, woodenware, various small novelties, bronze and pewter ware, manufactured silk goods, disinfectant incense, bone products.
- PACIFIC NORTHWEST SPAR CO., 6 Nickerson St., Seattle. Wash. Established 1917. Telegraphic address, "Pacnorspar." Principal imports: None. Principal exports: Ship spars, cargo booms, etc. Bank references, Scandinavian-American Bank, Seattle.
- PENDERTON & CO., IMC., Hoge Bldg. Established 1918.
  Codes used, Bentley's. Principal imports: Raw silk, rubber, fibers, coffee, tea, rice, copra. Principal exports: Hardware and tools, machinery, electrical supplies, plumbing supplies, leather products, tin plates, and farm tractors.
- A. U. PIEKEAN & CO., INC., 554 Colman Bldg. Established 1917. Telegraphic address, Capco. Codes used, Lieber's, Bentley's, Western Union, A. B. C. 5th edition, Armsby's, Private. Principal imports: Oriental silk, beans, peas, rice flour, potato starch, Manchurian walnuts, vegetable oils, shelled peanuts, copra, Oriental products in general. Principal exports: Steel. canned salmon, evaporated milk, foodstuffs, and provisions in general, lumber, leather, machinery, manufactured articles.
- Jackson St., Seattle, Wash. Established, 1916. Branches, none. Bank references: The Scandinavian-American Bank. Imports: Jewels. Exports: Marine compasses and binnacles.
- Wash. Established, 1909. Telegraphic address, Reymor. Codes used, Western Union, A. B. C. 4th and 5th editions. Branch office addresses, 505 Gerlinger Bldg., Portland, Ore.; 813 St. Clair Bldg., San Francisco, Calif. Principal imports: Creosote, oils, gums, and any natural Oriental products. Principal exports: Colors. dyestuffs, naval stores, chemicals, raw materials, all kinds. Bank references, National Bank of Commerce, Seattle, Wash.
- Wash. Imports: Oils, tallow, copra, hides, bristles, canes, beans, rice, camphor, albumen, egg products, vegetable wax, ores. Exports: General merchandise, canned goods, fruit, fish, milk, dried fruits and vegetables, lumber and shooks, raw and manufactured materials, chemicals, iron and steel products, film projection equipment and electrical installations for general lighting purposes for the motion picture trade. Established, 1916. Cable address, "Robinson." Codes used, A. B. C. 5th edition, A. B. C. 5th edition imp., Western Union, Bentley's. Branches, San Francisco. Bank references: First National Bank, Seattle.
- BOGERS BROWN & CO., 708-715 Hoge Bidg., Seattle, Wash. Branch offices, Chicago, New York, San Francisco, Kobe, Japan; Shanghai, China; Los Angeles, Calif. Established 1911. Telegraphic address, "Rogbro Seattle." Codes used, Bentley's, A. B. C. 5th edition, Western Union. Principal imports: Oriental vegetable and animal oils, vegetable and animal tallows, copra, oil, seeds, beans and peas, fertilizer. Principal exports: Iron and steel, machinery, lumber, barrel shooks, chemicals, glue, packing house products.
- BOTEWELL & CO., IEC., 902 Hoge Bldg. Established 1888. Telegraphic address, Rothwell Company. Codes used, Bentley's, A. B. C. 4th and 5th editions, Western Union. Principal imports: Copra, fish and vegetable oils, beans, peas, ginger, tallow, eucalyptus oil, butter, rabbit skins, rice, taploca, kauri gum and general merchandise. Principal exports: Canned salmon, fruits and vegetables, milk, fresh apples, rice, taploca, oils, beans, rosin, paraffine wax, heavy chemicals, coal tar intermediates, aniline dyestuffs, dyewood extracts, tanning extracts.
- SEATTLE MATTRESS & UPROLETHEY CO., 1717 6th Ave. So., Seattle, Wash. Established 1897. Principal imports: None. Principal exports: Mattresses, springs and upholstered furniture.



# James Griffiths & Sons

BURKE BUILDING S E A T T L E WASHINGTON

GENERAL AGENTS ON PUGET SOUND FOR STEAMERS OF

Mitsui & Co., Ltd.

#### REGULAR SAILINGS TO ORIENT

Agents-

Winslow Marine Railway & Shipbuilding Co. SEATTLE

### General Petroleum Corporation

Offices at
San Francisco
Los Angeles
Seattle

Producers and Refiners of High Grade

# California Petroleum

Refinery Capacity 25,000 Barrels Per Day Marine Deliveries at San Pedro, California and Seattle, Washington

Refineries at Vernon, California

Pipe Lines from Midway Oil Fields to Los Angeles Harbor

- Wash. Established 1913. Telegraphic address, Chain. Codes used, Western Union, A. B. C. Principal exports: Chain manufacturers of hand and machine made chain of all descriptions. Bank references, Seattle National Bank, Seattle, Wash.
- SEATTLE MACHINE WORKS. Established 1900. Office, 37 West Lander St., Seattle, Wash. Telegraphic address, "Smachyco." Codes used, Western Union. Bank references, Scandinavian American Bank. Exporters of steam marine engines, river harbor and gold dredges, hoisting machinery, oil engines, etc.
- BEATTLE PACIFIC SHIPPING AND TRADING CO., Leary Bldg., 1000 Second Ave., Seattle, Wash. Established 1918. Bank references, State Bank of Seattle. Cable address "Spactrade." Codes used, Western Union, A. B. C. 5th edition, Lieber's. Import and export miscellaneous goods on commission.
- SMOQUALMIE PALLS LUMBER COMPANY, 1119 White Bldg., Seattle, Wash. Mill office, Snoqualmie Falls, Wash. Principal imports: None. Principal exports: Lumber. Bank references, Dexter Horton and First National Bank, Seattle.
- STATLEY E. SEMPLE COMPANY, 816 Lowman Bidg., Seattle, Wash. Established, 1918. Branches, Tacoma, Wash. Bank references, Seattle National Bank. Exports: Steel, machinery and paper. Act as traffic representatives of general exporting and importing concerns.
- THOMAS BROKERAGE COMPANY, 1209 American Bank Bldg., Seattle, Wash. Established 1918. Codes used, Bentley's, Yopp's, Cross. Principal imports: Oriental vegetable oils. Principal exports: Steel commodities, paraffin wax, chemicals. Bank references, The Bank of California, N. A.
- U. S. EXPORTING AND IMPORTING CO., IMC. Head office, 200 Central Bidg., Seattle, Wash. Branch office, 425 E. Walnut St., Chicago. Established 1918. Telegraphic address, Sanyote. Codes used, Bentley's, Western Union, Private. Principal imports: Japanese produce, sulphur, fertilizers, straw and chip braid, cotton crepe, wicker ware, matches, etc. Principal exports: Tin, scrap iron, metals, chemicals, Pacific Coast lumber, dye stuffs, piece goods, waste paper, tools.
- U. S. FOOD PRODUCTS CO., 1717 Smith Bldg., Seattle, Wash. Exports: Soya bean flour, sandwich paste and table sauces.
- U. S. TRADING CO., 511 Pacific Bldg. Established 1914. Telegraphic address, Takeuchi, Seattle. Codes used, A. B. C. 5th edition. Principal imports: Specialties, bamboo ware, sporting goods, silk flags, brushes, leather goods, dentistry materials, lily bulbs, manganese, etc.
- WASHINGTON MATTRESS COMPANY, 1964 4th Ave. So., Seattle, Wash. Established 1900. Principal imports: Burlap, kapok. Principal exports: None. Bank references, Dexter Horton National Bank.
- WILCKEN-SCHEMCK CO., Empire Bldg., Seattle, Wash. Established 1917. Telegraphic address, "Wilcken-Schenck." Codes used, Western Union and A. B. C. 5th edition. Principal imports: Copra, cocoanut, oils, hemp, hides, Panama hats, also Philippine hats, pearl shells, rubber, rice, rabbit skins, and gunnles. Principal exports: Farm machinery, tractors, iron and steel products, gasoline engines, shipyard equipment and supplies, concrete mixers, concrete pipeforms, leather, shoes, cotton, paper, aluminum products, condensed milk, chemicals.

#### SEMERANG, JAVA, D. E. I.

JOHN YOUNGE, LTD., Semarang. Established 1911. Telegraphic address, Younge. Codes used, A. B. C. 5th. Principal imports: Motor cars, motorcycles, accessories, tires.

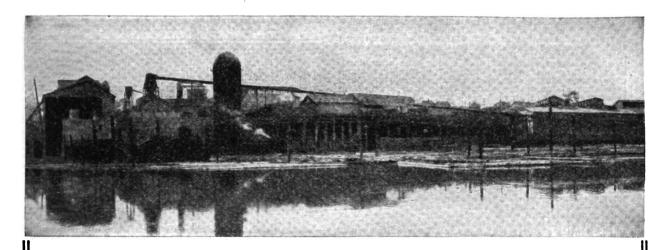
#### SHANGHAI, CHINA

ARNOLD EROS & CO., LTD. Import and Export Merchants. Engineers and Contractors. Head office, Shanghai. Branches at Hankow, Canton, Hongkong, Chinkiang, Chunkiang, etc. Also London and New York. Exporters of beans, seeds, wood oil, essential oils, raw cotton, fibres, egg products, hides and skins, tallow, galinuts, wool, raw silk and China produce generally. Importers of machinery, steel products, plece goods and sundries. General managers of The New Engineering and Shipbullding Works Ltd., The Oriental Cotton Spinning and Weaving Co. Ltd., The Saylun Silk Filature.

- ANDERSON, MEYER & CO., LTD. Head office No. 4, Yuen Ming Yuen Road, Shanghai, China. Branch offices, Changsha, Hankow, Harbin, Kalgan, Peking, Tientsin, Tsinan, China, Hongkong, Samarkand, Vladivostok, San Francisco, New York. Established 1915. Telegraphic address, Danica. Codes used, all. Principal imports: Metals, machineries, electrical goods and general imports. Principal exports: Carpets, lace, hair nets, tea, pongee, China produce generally.
- THE CRIMA IMPORT AND EXPORT CO., LTD. Head office, 6 Kiukiang Road, Shanghai, China. Branch offices in China, Antung, Tientsin, Peking, Hankow, Ningpo, Ichang, Foochow. Branch office in Japan, Hakodate, Otaru, Kushiro; Dant & Russell, Inc., Portland, Ore., U. S. A. agents. Established 1901. Telegraphic address, Lumberco. Codes used, A. B. C., Excelsior, Lieber's, Western Union and Western Union five letter edition. Principal imports and exports: Lumber.
- WATIONAL MERCANTILE CORPORATION, 34 Canton Road. Telegraphic address, Namerco. Codes used, A. B. C. 5th edition, Western Union, Lieber's, Bentley's and Private. Principal exports: All kinds of Chinese products.
- RING WAE TRADING CO. Head office, 534 Tenitsen Road, Shanghai. Branch office, 544 Grant Avenue, San Francisco. Established 1915. Telegraphic address, Shingwah. Codes used, A. B. C. 5th edition. Principal exports: Silks and food products. Principal imports: Hardware and machinery, etc.

#### SINGAPORE, STRAITS SETTLEMENTS

- CENTRAL ENGINE WORKS, LTD. Head office address, Singapore, Straits Settlements. Branch office addresses, Kuala Lumpur, Klang and Johore Bahru. Established 1911. Telegraphic address, Central. Codes used, A. B. C., Bentley's, Western Union, Eng. 2nd edition, Lieber's, Excelsior, and Private. Principal imports: Iron and steel, machinery, motor cars, motorcycles, marine and stationary engines, shipbuilding materials, pneumatic and solid tires, electrical lifts, machinery and fittings, sanitary engineering materials, estate and mining machinery and implements, general hardware, etc.
- THE BAST INDIES TRADING CO., 37 Robinson Road, Singapore Straits Settlements. Established 1900. Telegraphic address, Commerce. Codes used, A. B. C. 5th edition, Scott's, Bentley's, Private. Principal imports: Cotton, silk, piece goods, canned fruits and vegetables, dried fruits, condensed milk, hardware, men's wear, sundry articles, fancy goods, textiles, and muslin. Principal exports: Rice, copra, cocoanut oil, coffee, kapok, trocus shells, tapioca, sago, rubber, pepper, rattan, tin. Branch office addresses, Ban Seng & Co., Ipoh Perak; Leong Seng & Co., Taipeng; F. M. S. Singkee & Co., Penang. Bank references, Hongkong & Shanghai Banking Corp. and the Chinese Commercial Bank, Ltd. Desire export connections direct with consumers, manufacturers, importers or agents in the United States of America, Mexico, Africa, Australia, New Zealand and Canada; desire import connections direct with manufacturers, exporters or agents who represent manufacturers.
- JULIAN FRANKEL FURNITURE CO., Orchard and Tank Roads, Singapore, Straits Settlements. Established 1910. Telegraphic address, "Julian." Codes used, A. B. C. 4th and 5th. Principal imports: Furniture, steel office equipment, barber chairs, lampware, toys, fancy goods, scales, sanitary fittings, refrigerators, detachable row boat motors, automobiles, clocks.
- GUTHRIE & CO., LTD. Head office address, Singapore, Straits Settlements. Branch office addresses, London, Penang, Kuala Lumpur, Klang, Port Swettenham, Medan, Belawan. Established 1821. Telegraphic address, Guthrie. Codes used, Broomhalls, Bentley's, Scotts, A. B. C. 4th and 5th, A. L. Watkins, Lieber's, Western Union, Bedford McNeill. Government, banking, insurance and shipping agents, rubber estate agents and secretaries, general hardware and piece goods merchants, engineers and contractors.
- THE LUMBER COMPANY, LTD.: 6-a Malacca St., Singapore, S. S., Established 1901. Cable address, "Viztay." Codes used, A. B. C. 5th edition, Lieber's and Private. Correspondents in Europe, Australia, India, Java and China. Exporters of general products, specializing in lumber. General importers.
- SIME, DARBY & CO., LTD. Principal address, Singapore, Straits Settlements. Branch offices, Malacca and Penang, Straits Settlements, Seremban, Umar, F. M. S., London. Telegraphic address, "Simit." Codes used, A. B. C. 5th, Bentley's, Broomhall, Western Union. Bank references, Hongkong & Shanghai Banking Corporation. Importers of Estate supplies, metals of all descriptions, wire, tinplate, canned fish, liquors, oils and paints, etc. Exporters of rubber, tin, wolfram, hides, copra, etc.



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- THE UNION TRADING CO. Head office address, 36 Robinson Road, Singapore, Straits Settlements. Branch office address, Kuala Lumpur, Fed. Malay Sts. Established 1905. Telegraphic address, "Battleaxe." Codes used. A. B. C. 5th, Century Standard. Principal imports: Bariron, galvanized corrugated iron, hoops (box strapping), axes, scythes, hoes, shears, saws, cotton piece goods and underwears, caustic soda, soda bicarb., saccharine, alum. tartaric acid, other heavy chemicals, rubber manufactured articles in all lines.
- WASSIAMULL ASSOMULL & CO. Head office address, 56-57 High Street, Singapore, Straits Settlements. Branch office addresses, 42 Arab Street, Singapore, Hotel De L'Europe. Established 1870. Telegraphic address, Wassiamuli. Codes used, A. B. C. 5th, and Private. Principal imports: Silk and silk goods. Principal exports, silk and silk goods.
- WEARE & CO., LTD. Head office address, 35 Robinson Road, Singapore, Straits Settlements. Branch office addresses, 8 Jalan Tunku Hassan, Seramban, Fed. Malay States. Established 1914. Telegraphic address, Weare, Codes used, A. B. C. 5th, Broomhalls Rubber Ed., Holward, Bentley's. Principal imports: General importers of all goods. Principal exports: Straits produce.

#### SOERABAIA, E. I.

- APCAR & CO., Soerabaia, Java. Branch office addresses, Batavia, Semarang, Singapore. Established 1912. Telegraphic address, "Apcar." Codes used, Western Union. A. B. C. 5th, Premier. Principal imports: Nitrate of soda, sulphate of ammonia, Chile saltpeter, superphosphate, coke, glassware, piece goods, flour, provisions, shellac, biscuits, matches, paints, cements, papers, shoes, soap, perfumery, etc. Principal exports: Tapiccas, oils, copras, kapok, coffees, rice, maize, hemps, Java indigo, hides and skins, peppers, peanuts, seeds.
- EDGAR & COMPANY. Head office addresses, Soerabaia and Amsterdam, (Java and Holland). Established 1914. Telegraphic address, Edgar. Codes used, A. B. C. 5th, Lieber's, Private. Principal imports: Bandiron, taploca estates machinery, gunnybags. Principal exports: Coffee, cocoa, kapok, cassia vera, cassia fistula, castor-seeds, groundnuts (peeled and unpeeled), hides and skins, maize, nutmegs, copra, pepper, tin, taplocas (all kinds), soya beans, practically all colonial products. Branch office addresses, Semarang, Batavia, Bandoeng (Java); New York City, 64 Wall St.
- G. HEPPENSTEDT, Batavia, Semarang, Soerabaia, Java.
  Established 1891. Cable address, "Heppensted." Codes
  used, A. B. C. 5th edition, A1 and Private codes. Head
  office, Batavia, Java. Branches in Semarang, Soerabaia,
  Java, and Penang, Sumatra. Bank references, Nederlandsch Indische Escompte Maatschappy. Imports:
  General merchandise, textiles, provisions, beverages,
  iron, sundries. Exports: All products.
- M. V. MMY, t. v. d. z. o. Dunkerback & Co., Werfstraat, Soerabala, Java. Established 1918. Cable address, "Dunkerbeck." Codes used, Mercury code. Branch office addresses, Amsterdam, Semarang, Tegal. Bank references, N. I. Escompto My., Soerabala, The American National Bank, San Francisco.
- INDISCHE EXPLOITATIE MAATSCHAPPIJ, Soerabala, Java. Cable address, "Wolffers." Principal exports: Vegetable oils, teak, hard and wildwood. East Indian produce. Principal imports: Building materials, etc.
- Established 1913. Telegraphic address, Verhoop, Soerabaia. Codes used, A. B. C., Lieber's, A-1. Principal imports: Iron, steel, angles, bars, engineers' supplies, pipes, fittings, etc.; coffee, rice and sugar machinery, engines and boilers.
- PECEMISCE IMPORT BUREAU, Societeitstraat, Soerabaia. Branch office addresses, Batavia, Semarang, Djokjakarta, Padang, Medan. Established 1916. Telegraphic address, Tibur, Soerabaia. Codes used. A. B. C. 5th. Principal imports: Interested in everything in engineering line. Sundry goods (hardware, machines, filter cloths, copper and brass wire gauze, sanitary ware, pipings, fittings), used by sugar mills, oil copra, rubber, mining concerns, agricultural estates, builders' ware, etc.

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THE REPLECTOLYTE COMPANY. Head office address, 914 Pine St., St. Louis, Mo.; branch office, J. A. Drummond, 245 Mission St., San Francisco, Calif. Established 1916. Principal exports: Lighting fixtures.

#### SUVA. FIJI

- A. M. BRODEIAE, LTD., Renwick Road, Suva, Fiji Islands. Telegraphic address, "Brodziak." Codes used. A. B. C. 4th and 5th editions, Western Union. Principal imports: General merchandise, drapery, all grades, boots and shoes, hardware, agricultural implements, groceries. Principal exports: Copra, bananas, rubber. All communications to head office. Bank references, Bank of New South Wales, Sydney and Suva.
- BROWN & JOSKE, Suva, Fiji. Established 1888. Telegraphic address, "Joski." Codes used, Bentley's, A. B. C. 5th edition. Principal imports: General merchandise, wines and spirits, plantation stores. Principal exports: Copra, bananas, hides. Bank references, Bank of New South Wales.
- MORRIS, REDSTROM, LTD., Suva, Fiji. Established 1868.
  Main distributing center, Levuka. Telegraphic address,
  "Genba," Suva; "Morrished," Levuka. Codes used, A. B.
  C. 5th edition, Western Union, Bentley's. Principal imports: Foodstuffs, tinned salmon, drapery, prints, towels, singlets, boots and shoes. Principal exports: Copra, sici (trocas) shell, turtle shell, pearl shell, bananas.
  Branch office addresses, Lankota, Ba, Saon Sairi, Tavium, Penang, Tavria, Nateway Bay. Bank references,
  Bank of New Zealand.

#### SWATOW, SOUTH CHINA

EXT EERG CO., Toi-It-Chen. Established 1914. Telegraphic address, Cognehik. Codes used, A. B. C. 5th edition and Western Union. Principal imports: Manufactured goods. Principal exports: Native produce, drawn work, wolfram ores, fowl down.

#### SYDNEY, AUSTRALIA

- PRED ALDERSON & CO., LTD., 321 Pitt Street. Established 1890. Telegraphic address, Aberladye. Codes used, A. B. C. 5th edition, and Western Union, also private codes. Principal imports: General indentors. Principal exports: Australian produce.
- THE AUSTRALIA MFG. & IMPORTING CO., LTD., 5-11
  Parker St., Haymarket, Sydney, Australia. Established
  1898. Telegraphic address, Hustle. Codes used, any.
  Branch office addresses, 91-93 Southwick St., S. E., London; 39 Aksahi Mache, Kobe, Japan; 352 Flinders Lane.
  Molbourne; Sheffield House, Perth, Christchurch, N. Z.
  Importers of hardware, goods, lighting materials, oils
  and all eastern products. Exporters of gum, hides, flax,
  flour, etc. Bank references, The Commercial Bank of
  Australia, Ltd., Sydney; The Yokohama Specie Bank,
  Kobe, Japan.
- E. E. BRIDEKIEK, (Successor to General Agency & Trading Co.), P. O. box 668. Branch office addresses, Melbourne, Brisbane. Established 1908. Telegraphic address, "Vermer." Codes used, A. B. C. 5th, Western Union. Principal imports: Grocery lines, hardware, electrical goods, motor accessories, drugs, druggists' sundries, cotton and silk goods, general merchandise. Principal exports: Hides and skins, hoofs, horns, wool, tallow, flour, meats and preserves.
- CARSON, BRAY & CO., 285 George St., Sydney. Established 1912. Telegraphic address, "Vermer." Codes used, Western Union, A. B. C. 5th, Bentley's. Principal imports: General merchandise, soft goods, silks and fancy goods, light hardware, glass, chinaware, motor accessories, edible oils, drugs, chemicals, standard groceries.
- G. E. CRANE & SONS, LTD., 33 and 35 Pitt Street. Established 1867. Telegraphic address, Cranium. Codes used, A-1, A. B. C. 5th, Bentley's, etc. Principal imports: Plaster of Paris, galvanized iron, black steel sheets, copper sheets, flooring and wall tiles. Principal exports: sheet lead, lead pipes, tin pipes, compo pipes and sundry lead manufactures, etc.
- DISTRIBUTERS COOPERATIVE CO., LTD., 115 Pitt St., Sydney. Established 1916. Codes used, Western Union. Principal imports: General groceries, canned foodstuffs.



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- JAMES HARDIE & CO., LTD., Asbestos House, York & Wynyard St., Sydney, Australia. Branch office addresses, 581-3 Little Collins St., Melbourne; Courier Buildings, Brisbane; Currie St., Adelaide. Established 1887. Telegraphic address, Hardier. Codes used, A. B. C., Lieber's, Western Union. Principal imports: Tanning materials, tanning machinery, building machinery, 3-ply veneer, asbestos, slates, laundry machinery and supplies. Principal exports: Leather.
- T. W. HEATH & CO., LTD., 204 Clarence St. Established 1905. Telegraphic address, Woolhealth. Codes used, A. B. C. 5th edition. Principal imports: Earthenware, china and glassware.
- WILLIAM LEWIS, Stafford House, 316 Pitt St., Sydney. Branch offices, Melbourne, Brisbane, Adelaide, Perth. Established 1888. Telegraphic address, "Journalize Sydney." Codes used, Western Union, A. B. C. 5th, Lieber's. Principal imports: Cotton piece goods, cotton underwear, silk hosiery, stationery sundries, paper, all kinds wrapping, writing, toilet, newsprint, wall paper, envelopes, waxed, vegetable parchment.
- LINDSAY AND CORMACE, 4 Underwood St. Telegraphic address, Roscrana. Codes used, A. B. C. 5th edition. Principal imports, builders' lines, such as wallboards, roofings, paints, etc.
- MAJOB BROS. & CO. Head office, Exchange corner, Pitt St., Sydney, Australia. Branch offices, Melbourne, Fremantie, Adelaide and Wellington. Established 1906. Telegraphic address, Castlesman. Codes used, A. B. C. and Bentley's. Principal imports: Dyestuffs, chemicals, oils and specialties. Principal exports: Gums, minerals, etc.
- B. S. MOORE & CO., 387 George. Established 1905. Telegraphic address, Bronmor. Codes used, Western Union, A. B. C. 5th edition. Principal imports: Glassware, druggists' sundries, chemicals, confectionery.
- Branch office addresses, 240-242 Little Lonsdale St., Melbourne, Australia; 98 Eagle St., Brisbane, Queensland; 86 Jervois Quay, Wellington, New Zealand. Established 1903. Telegraphic address, "Pearline Sydney." Codes used, A. B. C. 5th edition, Lieber's, Western Union. Representing manufacturers on a commission basis. Bank references, Bank of Australasia, Martin Place, Sydney, N. S. W. Australia.
- ESTABLETSON & YOUNG, LTD., 58 Hunter St., Sydney. Established 1912. Telegraphic address, Lenyoun. Codes used, A. B. C. 5th and 4th, A-1, Western Union, Private. Principal exports: Tallow, wool, wheat, flour, butter, dried fruits, tinned meats, meat extract, beef and sheep casings, canned fruits and jam, copra, trocas shell, hides and skins.
- ESCOTT EENDERSON & CO., 60 Margaret St., Sydney. Established 1845. Telegraphic address, "Henna." Codes used, A-1, A. B. C. 5th edition Scott's, Western Union. Principal imports: Oregon redwood, 3-ply veneer, iron, steel, builders' ironmongery, general hardware, explosives, olive oil, tinned fish, fruits, asparagus, linoleum, carpets, silk, earthenware, china, cigars, cigarettes, tobacco, pipes, etc.
- J. W. E. TUBBER & CO., LTD., 18 Bridge St., Sydney. Head office. Branch offices. Brisbane, Rockhampton and Townsville, also Melbourne. Established 1914. Telegraphic address, Nirvana. Codes used, Lieber's Standard and 5 letter, A. B. C. 5th edition and Bentley's. Principal exports: Hides and leather, tallow, premier jus, dripping, copra, horns, hair, bones and fertilizers, kangaroo wallaby, bear, opossum, fox, rabbit, calf and sheep skins.
- G. S. YUILL & CO., LTD., 6 Bridge St., Sydney, New South Wales. Principal imports: Tinplates, steel hoops, machinery. Principal exports: Meats, fats, hides and skins, casing. Bank references, Bank of New South Wales, Australia.

#### TACOMA, WASH., U. S. A.

- P. S. HARMON & CO, Tacoma, Wash. Exports: Furniture, linoleum, rugs and stores.
- NORTH WESTERN WOODENWARE COMPANY, 21st and Dock Sts., Tacoma, Wash. Established 1902. Bank references, Bank of California, N. A., Tacoma, Wash. Exports: Fish pails, fish kits, lard or grease tubs, vinegar and pickle pails, small kegs.
- PACIFIC STEEL & BOILER CO., 1549 Dock St., Tacoma, Wash. Branch office address, L. C. Smith Bidg., Seattle, Wash. Principal exports: Boilers and tanks. Bank references, Puget Sound and Trust Company, Tacoma.

#### TIENTSIN, CHINA

- AMERICAN MACHINERY & EXPORT CO., Tientsin, China. Branch office, 623 Insurance Exchange, San Francisco. Established 1910. Telegraphic address, "Meiching." Codes used, A. B. C. 5th, Lieber's, Bentley's. General importers and exporters. Principal imports: General merchandise, all metals, wire, nalls, steel plates, hard and mild steel bars, tinplates, bamboo steel, wire rods, screws, aniline dyes, provisions. Principal exports: Nuts of all kinds, seeds, hides and skins, oils, carpets, egg products, cotton, strawbraid and China produce generally.
- CALLIMS & CO., 1 Taku Road, Tientsin, head office. Branch office, 4 Canton Road, Shanghai, China, and London, England. Established 1870. Telegraphic address, Callins. Codes used, Bentley's, Lieber's, A-1, and private codes. Principal imports: Galvanized iron, flour, provisions, cotton piece goods, machinery, iron and steel, etc. Principal exports: Sheep's wool, camel's wool, bristles, straw braid, untanned goat skins, furs, etc.
- CHANDLESS & CO., Tientsin, China. Established 9 years.
  Codes, A. B. C. 5th edition, Western Union, Bentley's.
  Telegraphic address, Chandless, Tientsin. Exporters of
  sheep and camelwool, skins, furs, hides, tanner's goat
  and sheepskins, bristles, horsehair, oilseeds walnuts,
  egg products, etc.
- CHIMA & JAVA EXPORT CO., Tientsin, China. Cable address, Chinjav. Codes used, New Leviathan, Whitelaw's 401 Million Words, Lieber's Standard Telegraphic Code, A-1, A. B. C. 4th and 5th editions, private. Importers and exporters of all kinds of hides and skins.
- THE EASTERN TRADING CO., LTD., Tientsin, China. Established 1900. Branches at Hankow, Peking. Cable address, "Watson Tientsin." Codes, Bentley's, Lieber's, Western Union, A. B. C. 5th and improved edition. Exporters of every variety of China produce. Importers of all kinds of manufactured goods, papers, factory machines, and sundries, steel and iron products, dyes, chemicals, etc. Fire and marine insurance agents.
- P. A. PATRCHILD, 38-49 Taku Road, Tientsin, North China-Established 1915. Telegraphic address, Fairchild, Tientsin. Codes, Bentley's, Complete Phrase, Lieber's 3 figure, Private, A. B. C. 8 figure. Exporters of bristles, hemp, wool, fur and skins, cotton, human hair, albumer, egg yolk, seeds.
- PEARON, DANIEL & CO., INC., Tientsin, China. New York office, 90 Wall St.; San Francisco office, Rolph, Mills & Co., 149 California St. Established 1817. Cable address, Fearon. All codes used. Exporters of wool, camel hair, bristles, hemp, cotton, walnuts, peanuts, egg products, all crude and raw materials. Importers of metals of all kinds, railway supplies, paints, soaps, Delco Lighting Plants, all general lines. Agents, Pacific Steamship Co. and American Express Co.
- WILLIAM FORBES & CO., Head office, Tientsin, North China. Branches in London. Peking, Chinwangtao, Manchouli and Harbin. Merchants, importers and exporters, shipping and insurance agents.
- EALPH HARPER & CO., Rue Dillon. Tientsin, China. Established 1904. Telegraphic address, Reprah, Tientsin. All codes used. Importers of piece goods, metals and sundries. Exporters of raw cotton, bristles, hemp, wool, furs, skins, egg products, seeds, etc.
- WILSON CO., Address 68 Victoria Road, Tientsin. Telegraphic address, "Wilson." Codes, Lieber's, Bentley's, A-1, Western Union, Private, Principal exports: Sheep, wool, camel's wool, goat's wool, jute, hemp, cow hides, tanned and untanned goatskins, goatrugs, untanned sheep skins and sheep rugs, dog skins and bristles and all China produce. Steamship and insurance agents.

#### TOKYO, JAPAN

- ANDREWS & GEORGE CO., 16 Takegawa-cho, Kyobashi-ku, Tokyo, Japan. Established 1894. Telegraphic address, Yadzu Tokyo. Codes used, A. B. C. 4th and 5th editions, Western Union 1900 edition, Lieber's, General Telegraph Code, A-1, A. & G., private. Principal imports: Machinery, machine tools and general merchandise.
- FURUKAWA & CO., LTD. Established 1903. Head office, 1 Ichome-Yaesacho-Kojimachi, Tokyo, Japan. Branch office, London, New York, Bombay, Calcutta, Shanghai, Hongkong, Hankow. Dairen, Seoul, Osaka, Kobe, Momi, Nagoya, etc. Telegraphic address, "Furukawa." Codes used, A. B. C. 5th, Bentiey's Complete Phrase Code, Western Union T. C. 5 letter edition. Bank references, Yokohama Specie Bank. General importers. Exporters of copper, cables, insulated wires, electric wire works, etc.

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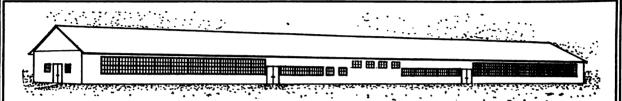
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- THE ASARI GLASS CO., LTD. Established 1907. Office, Eirakucho, Tokyo, Japan. Telegraphic address, "Glass, Tokyo." Codes used, A. B. C. 5th, Bentley's, Western Union, Private. Bank references, Banks of Japan, Mitsubishi Bank, etc. Exporters of window glass.
- Tokyo, Japan. Established, 1885. Cable address, "Fujiden." Codes used, A. B. C. 5th Edition. Branch office addresses, Osaka Utsubo Minamitori, Fukuoka Shimo-Shinkawabata, Japan. Exports: Rubber and paper insulated wires and cables, leaded and armored cables, varnishes, cambric cables, vulcanized bitumen cables, asbestos cables, enameled wires, cotton and silk covered wires, bare wires, etc.
- M. HARRISON & CO. Established 1898. Address Tokyo, Kaijo Bidg., Tokyo, Japan. Telegraphic address, "Tallyho." All codes used. Bank references Yokohama Specie Bank, Tokyo Branch; Mitsubishi Bank, Marunochi Branch, Tokyo. Importers of: Metals and general chemicals. Exporters of: General products of Japan.
- MOSPITAL SUPPLY CO., LTD., Ginza, Owaricho, Tokyo, Japan. Established, 1910. Cable address, "Fenner." Codes used, A. B. C. 5th Edition, Bentley's, Western Union. Expect to have branches in Harbin, Vladivostok, Shanghai and Seattle. Bank references, Yokohama Specie Bank, Japan. Imports: Drugs, chemicals and dyes, rubber, surgeons' gloves and other rubber medical goods, hospital furniture and supplies of all kinds for hospitals, dispensaries, etc. Exports: Surgical instruments, glassware, porcelain ware, etc.
- ZAKE, MOCHIDEUXI, No. 14 Marunouchi, C., Tokyo, Japan. Established, 1915. Cable address, "Mochikane." Codes used, A. B. C. 5th Edition, Lleber's, Bentley's. Branch offices, Shiba, Tokyo, Hiroo, Tokyo, Japan. Bank references, The Bank of Taiwan, Ltd., New York. Imports: Tungsten, molybdenum and platinum, substitute wires for electric lamps and other materials as well as machinery, for this line; electric apparatus and other materials of the same. Exports: Electric lamps of all kinds, tungsten lamps, carbon lamps, decorative lamps, automobile lamps, flash light bulb and electric accessories, etc.
- THE KOKUSAI NEWS AGENCY. Head office address, 3 Aoicho A. Kasake, Tokyo, Japan; branch office addresses, 51 Chambers street, New York; 5 Nanking Road, Shanghai: 24 Old Jewry, London; Kokesai, Osaka. Principal imports: News and advertising. Principal exports: News and advertising.
- MARUSEN COMPANY, LTD., 11 to 16 Nihonbashi Tori-Sanchome, Tokyo, Japan. Established 1869. Cable address, "Maruya." Codes, A. B. C. 5th Edition, A-1 Bentley's, Lieber's. Branch offices at Osaka, Kyoto; Fukuoka and Sendai, Japan. Bank references, Yokohama Specie Bank. Ltd., The 100th Bank, Ltd., The Mitsubishi Goshi Kaisha Banking Department. Importers of: Books and periodicals, stationery and dry goods.
- MIKIMOTO PEARL STORE, 3 Giuza-Shichome, Tokyo, Japan, head office. Branches at Osaka, Japan, Shanghai, China, and London. Established 1890. Telegraphic address, Pearlmiki. Codes used, Western Union 5 letter edition. Principal imports: Pearls, precious stones, diamonds, jewelry. Principal exports: Mikimoto cultured pearls, Japanese pearls, jewelry.
- HITSUBIBLI SHOJI KAISHA, LTD. Established 1918. Head office, 1, Yaesu-cho, Itchome, Kojimachi-ku, Tokyo, Japan; branch and agencies, Tokyo, Yokohama, Osaka, Kobe, Nagoya, Nagasaki, Karatsu, Wakamatsu, Moji, Kure, Tsuruga, Otaru, Hongkong, Vladivostok, London, Paris, New York, other locations. Telegraphic address, "Iwasakisal Tokyo." Codes used A-1, A. B. C. 5th, Western Union, Bentley's Complete Phrase. Importers of iron, steel, machinery, machine tools, chemicals and general merchandise. Importers of coal, copper and all metals cereals, chemicals, glass, canned fish, and general Oriental products and merchandise.
- MITSUI & CO., LTD.. (Mitsui Bussan Kaisha, Ltd.). Head office, No. 1 Suruga Cho, Tokyo, Japan; branch offices, New York, San Francisco, Seattle, Vancouver, B. C.; Hamburg, London, Lyons, Canton, Hongkong, Shanghai, Newchwang, Harbin, Vladivostok, Dairen, Tieling, Choshun, Tientsin, Mukden, Seoul, Chemulpo, Antung, Bangkok, Rangoon, Soerabaia, China, Calcutta, Sydney, Manila, Bombay, Singapore, Japan, Portland, Oregon.
- MAIGAI BUSSAM SECKAI, Tokyo, Japan. Branch office address, 112 Market street, San Francisco, Calif. Established, 1918. Telegraphic address, "Esushokai." Codes used, Bentley's, A. B. C. 5th Edition. Principal imports: Beans, oil. Principal exports: Iron and steel machinery. Bank references: The Yokohama Specie Bank, Ltd.

- MOGI & CO., Tokyo Branch. Central P. O. Box, 43 Tokyo. Head office, Yokohama; branch offices, Osaka, Kobe, New York, London, Lyon, Bombay, Calcutta, Singapore, Sydney, Hankow, Shanghai, Tientsin, Tsingtao. Importers and exporters habutae, raw slik, machinery, metals, minerals, wools, chemicals, sundry goods, etc.
- OKADA & CO., LTD., Koamicho, Tokyo, Japan. Branch office addresses, Osaka, Otaru, Dairen, Shanghai, San Francisco. Established 1917. Telegraphic address, "Okai-Chi," San Francisco. Codes used, Bentley's Phrase code, A. B. C. 5th Edition, Private code. Principal imports: Beans, cocoanut oil, crabmeat, camphor, cereals, fish oil, isinglass, linseed, peas, peanuts, peanut oil, potato starch, rapeseed oil, rice, rice flour, safety matches, soya bean oil, vegetable wax. Principal exports: Automobiles, automobile parts, automobile accessories, boilers, boiler tubes, car wheels, chemicals, dyes and intermediates, drugs, electrical apparatus, engines, fertilizers, hardware, hides and skins, iron goods, leather, machinery, meters, motors, oil, olive oil, paper. Bank references: Yokohama Specie Bank, Ltd.
- ORIENTAL TRANSPORTATION AND TRADING CO.,
  LTD. Established 1912. Head office address, No. 11
  Chome, Yuuraku-cho, Kojimachi-Ku, Tokyo. Branch
  office address, Osaka, Kobe, Shanghai, Hankow. Dairen.
  Wakamatsu. Telegraphic address, "Tonfang." Codes
  used, A. B. C. 5th Edition, Bentley's, Western Union
  Code. Bank references, Brown Bros. Co., San Francisco,
  or New York. Importers of steel and iron products,
  chemicals, oils, pigment, building materials, hardware,
  etc. Exporters of metals, ores, oils, canned goods, dried
  cod fish, paints, electrical goods, tile and fire bricks,
  cotton goods, etc.
- OWARIYA SECTEM, Sanchome, Yokohama-cho, Nihon-bashi-ku. Established 1865. Telegraphic address, Owariyasu, Tokyo. Code used. A. B. C. 5th Edition. Principal imports: Hides and leathers, rubber overshoes, iron nails, general optical instruments, mobile oils, whiskey and wines, cheese and provisions, tollet goods, safety razors. Principal exports: Glasswares, fancy goods, sundries, all kinds of brushes, all sorts of hosiery goods, pouches of all kinds, fountain pens, garters, shoes and shoe findings, electric accessories, enamel wares, baskets and bamboo wares, etc.
- SAMKYO CO., LTD., Muromachi, Nihombashi, Tokyo, Japan. Established 1899. Telegraphic address, Sankyo, Tokyo. Codes used, A. B. C. 5th Edition, A-1 Code, Lieber's, Western Union, Bentley's. Branch office, Park Row Bidg., 15 Park Row, New York. Principal imports: Drugs, chemicals, dyestuffs, surgical instruments, electrical insulators, etc. Principal exports: All Japanese chemicals, surgical instruments. Bank references, The Yokohama Specie Bank, Ltd.; The Bank of Taiwan, Ltd.
- Tokyo. Codes, Bentley's, A. B. C. 5th, Western Union. Principal exports: Raw silk, waste silk, spun silk, hemp braids, chemicals. Principal imports: Textiles, matches, chemicals and colors, machinery, watches.
- E. SUEUEI & CO., Yoshitoku. Head office, Yoshitoku Co.; hranch office, San Francisco. Calif. Established 1914. Telegraphic address, Yoshitoku. Principal exports: Toys, brushes and general Japanese merchandise. Principal imports: Automobile steel, iron, typewriters and hardware
- THE TAISHO TRADING CO., LTD., Kyobashiku, Tokyo, Japan. Branch office addresses, Osaka, New York, San Francisco. Established 1916. Telegraphic address. "Taivow." Codes used, Bentley's, private, A. B. C. 5th Edition. Principal imports: Steel, iron, metal, tin plates, machinery, automobiles. Principal exports: Green peas, beans, oil of all kinds, tungsten, antimony. Bank references, Bank of Taiwan, N. Y.; Yokohama Specie Bank, N. Y., and Sumitomo Bank, San Francisco.
- TAKANINE INDUSTRIAL CO., LTD., Tokyo. Marine Insurance Bldg., Cable address, Polyzime. Importers, exporters and manufacturers. Specialties: Chemicals, drugs, their allied goods, chemical machinery, dyes, asbestos, etc.
- TAKATA & CO., Tokyo, Japan. Branch office, 50 Church street, New York, N. Y. Established 1881. Telegraphic address, "Shinzo." Codes used, Bentley's and private codes. Principal imports: Ores, beans, potato flour, potato starch. Principal exports: Iron and steel, machinery. Bank references: Laidlaw & Co., 26 Broadway, New York, N. Y.
- YEMDO BROS. Export and import. Commission. Tokyo, Kaijo Bidg., Marunouchi, Tokyo. Sole agents in Japan for John Dickinson & Co., Ltd. (paper makers), London, Cable address, Lionbrand, Tokyo. New York branch: Yendo Bros., Woolworth Bidg., New York. Principally in papers, iron and steel products, machineries, machine tools, etc.

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- YANUMA & COMPANY, LTD., No. 1, Shichome, Ginsa, Tokyo, Japan. Established, 1908. Cable address, "Yanuma," Tokyo. Codes used, A. B. C. 5th Edition, Western Union, Bentley's, Lieber's. Branches, No. 93 Isobe dor't chome, Kobe, Japan. Bank references, The Sumitomo Bank, Ltd., Tokyo; The Hundredth Bank, Tokyo Banque, Franco Japonaise, Tokyo, Japan. Imports: Iron, nickel, zinc, lead ores, etc., automobiles and bicycles, woolen goods, machineries, fire appliances, canned goods, chemicals and drugs, fertilizers, strip steels, hardware and typewriters, stationeries and office supplies, grains and cereals, dyestuffs and colors, pulps, paper. Exports: Metal wares, bamboo wares, mattings, agar-agar, electrical and gas supplies, all kinds of needles, glasswares, antimony wares, celluloid articles, lacquered wares, porcelain wares, Japanese pearls, cigar lighters, press studs, pocket knives, stationeries, notion goods, hemp, braid, etc.
- YOSHIRAWA & COMPANY, Shimbashi, Tokyo. Established 1879. Telegraphic address, Yoshizawa, Tokyo. Codes used, A. B. C. 5th Edition, Lieber's and Western Union. Principal imports: Paper pulp, rubber material, etc. Principal exports: Shell buttons, hemp braids, toys, chemicals, papers, cotton socks, bootlaces, rubber goods, celluloid toys, brushes, stationery, etc.

#### TRUJILLO, PERU

ALBERTO SOMMABUGA, Alberto Sommaruga, Trujillo, Peru. Established 1918. Telegraphic address, Sommaruga. Codes used, A. B. C. 5th Edition, Lieber's, Simplex. Importers of commodities and small stowage. Exporters of cotton, leather, gold and silver, cocaine. Bank references, Bank of Italy, Lima, Peru.

#### VALLS, SPAIN

J. BALCELLS GALOFRE, Valls, Spain. Established 1906. Cable address, "Balcells, Valls." Codes used, A. B. C. 4th and 5th Editions and private codes. Bank references, Banco de Valls and William Schall & Co., New York. Exports: Walnuts, filberts and almonds.

#### VALPARAISO, CHILE

GUSTOM, GREDIT & TRADING GORPORATION. Head office address, Blanco 891, Valparaiso, Chile. Branch office address, Santiago di Chile, S. Antonio 449. Established 1916. Telegraphic address, Cacial. Codes used, A. B. C. 5th Edition, Broomhall's Imperial. Principal imports: Food stuffs, textiles, hardware, iron, steel, sundries. Principal exports: Chilean products, peas, beans, hides, sheep skins, wool, guts, soda nitrate, sulphur, minerals.

#### VANCOUVER, B. C.

- BERNET, GLUCK & COMPANY, 173 Cordova street. Established 1915. Telegraphic address, Bernet. Codes used, A. B. C., Western Union. Principal imports: Fancy goods, clocks and jewelry, dry goods, underwear, etc.
- BOND & PRIER, LTD. Head office address, 522 Metropolitan Bldg., Vancouver, B. C.; branch office address, No. 20 Kobe. Established 1911. Telegraphic address, Bondage. Codes used, Bentley's, A. B. C. 5th Edition, Western Union. Principal imports: General. Principal exports: General.
- WM. BRAID & CO., 1084 Homer street. Established 1893.
  Telegraphic address, Braid. Codes used, A. B. C. 5th
  Edition. Standard coffee, Bentley's, Western Union.
  Principal imports: Tea, coffee, spices. Principal exports: Tea.
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- BURBARD SAWMILLS, LTD., 1211 Dominion Bidg., Vancouver, B. C. Principal imports: Copra and all vegetable oils. Principal exports: Douglas fir lumber, boxes and box shooks. Bank references: Standard Bank of Canada, Vancouver, B. C.

- Vancouver, B. C. Established 1915. Telegraphic address, Canadanut. Codes used, Bentley's principally, but all other recognized codes. Principal imports: Peanuts and olls (Soya bean, peanut, china wood, cocoanut, etc.). Principal exports: Peanut butter, caustic soda, soda ash, box shooks. Bank references: Dominion Bank, Vancouver, B. C.
- CAMADIAN EXPORT & IMPORT CO., LTD. Head office 349-351 Homer street, Vancouver, B. C. Branch office, 15 Imabashi 2 Chome Higashi Ku, Osaka, Japan. Established 1914. Telegraphic address, Canadatomada. Codes used, A. B. C. 5th Edition. Principal imports: Watch crystals, brushes, knives, toys and fancy goods. Principal exports: Bone and lumber.
- CAMADIAN FIPE CO., LTD., 550 Pacific street, Vancouver. B. C. Established 1904. Principal imports: None. Principal exports: Machinery for the manufacture of wire wound wooden water pipe; also electric motors. Manufacturers of wire wound wood pipe for waterworks, irrigation and power purposes, sizes 2" to 24" diameter. Bank references: Royal Bank of Canada, Vancouver, B. C.
- CURICEMAY BROS., 325 Howe street, Vancouver, Canada. Customs Brokers and Forwarding Agents. Special attention given to Oriental merchandise for distribution to all parts of Canada and United States. Reference: Bank of Montreal, B. N. A. Branch, Vancouver, B. C.
- PEPIANCE PACKING CO., LTD., 412 Standard Bank Bldg., Vancouver, B. C. (Canada). All standard codes used. Canners, shippers and exporters of canned salmon, herring, pilchards: fresh, frozen, cured and smoked fish. Reference: Standard Bank of Canada, Vancouver, B. C.
- M. DES BRISAY & CO., 402 Pender street, West, B. C. Branch office address, cannery at Wales Island, B. C. Telegraphic address, "Brokers." Codes used, A. B. C., Western Union. Principal exports: Canned salmon, canned herring. Bank reference: Bank of Montreal, Vancouver, B. C.
- DISKER & CO., LTD. Head office, 515 Winch Bldg., Vancouver, B. C., Calgary, Alberta. Established 1900. Telegraphic address, "Disher." Codes used, A. B. C. 5th Edition and improved, Western Union, Bentley's, Yopp's, Marconi's, Armsby's. Principal imports: Chemicals, dried fruits, copra, spices, coffees. Principal exports: Steel, steel tools, machinery, fish, canned and salt, apples, potatoes, milk.
- DOMINION PRODUCTS, LTD., Standard Bank Building, Vancouver, B. C. Branch office address, New Westminster, B. C. Established 1916. Codes used, Western Union. Principal imports: Carrots, turnips, onions, potatoes, peas and beans. Principal exports: Evaporated (dried) sliced and shredded potatoes, shredded carrots, turnips, onions and manufacturers of soup mixture (julienne). Bank references: Standard Bank of Canada.
- BARRY DUKER, LTD., 122 Sixth Ave. W., Vancouver, B. C. Established 1907. Codes used, A. B. C. 5th Edition, Western Union, Bentley's. Bank references, Merchants Bank of Canada, Vancouver, B. C.
- EDGETT, W. E., LTD., 860 Cambia St. Established 1917. Telegraphic address, Edgett. Codes used, A. B. C., Bentley's. Principal imports: Cereals and oils.
- B. S. PORD CO., LTD. Head office address, 403 Mercantile Bldg., Vancouver, B. C.; branch office addresses, No. 41 Silvester-Willson Bldg., Winnipeg, Manitoba; 106 Mappin Bldg., Montreal, Que.; 203 Colman Bldg., Seattle. Established 1917. Telegraphic address, Drof. Codes used, A. B. C. 5th Edition and new Western Union (five letter edition). Principal imports: Silks, cotton crepes, buttons, rugs and mattings. Panama hats, baskets, vacuum flasks, cutlery, felt and silk slippers, brushes, bronze powder, electrical goods, kimonos, furs, underwear, camphor, rubber goods, suitcases, toys.
- WALTER D. FRITE, 407 Hastings W. Established 1908. Telegraphic address, Darrell. Codes used, A. B. C. 5th, Western Union, Armsby's. Principal exports, canned salmon and herring.
- GOSSE MILLERD PACKING CO., 597 Hastings St. W., Vancouver, B. C. Established 1913. Cable address, "Gossmiller." Codes used, Western Union, five letter edition or any standard code. Bank references, Molsons Bank of Canada, Vancouver, B. C. Exporters of canned salmon, canned herring, salt and smoked fish.
- THE JORDAN COMPANY, LTD., 789 Hastings St., W., Vancouver, B. C. Established 1914. Branch offices, 119 Grand Trunk Dock, Seattle, Wash.; 409 Washmetts St., San Francisco, Cal., also Tacoma. Bank references, Bank of Ottawa, Vancouver, B. C. Importers of rubber, crude vegetable oils, drugs, particularly quinine sulphate.

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- ver, B. C., San Francisco, Calif. Branch offices, 216 Colman Bldg., Seattle, Wash.; 341 Montgomery St., San Francisco, Calif.; 415 Oregon Bldg., Portland, Ore. Established 1911. Telegraphic address, Dragon (all offices). Principal imports: Oriental produce. Principal exports: Metals, lumber, salmon, etc. Bank references, Bank of British North America, Vancouver; Ladd & Tilden Bank, Portland; British American Bank, San Francisco; Scandinavian American Bank, Seattle; Canadian Bank of Commerce, Seattle.
- INTERNATIONAL IMPORT & EXPORT COMPANY, 114
  Bank of Ottawa Bldg. Established 1917. Codes used,
  Western Union, Bentley's, Principal imports: U. S. A.
  and Australian products. Principal exports: Canadian
  and U. S. A. manufactured products.
- C. B. JARVIS & CO., 119 Pender St. Established 1890. Telegraphic address, "Jarvisan." Codes used, A. B. C. 4th and 5th, Bentley's, Western Union. Principal imports: Beans, peas, nuts, spices, etc. Principal exports: Fish.
- A. K. LAVAN COMPANY, 207 Hastings St. W., Vancouver, B. C. Established 1914. Telegraphic address, Lavan. Codes used, Bentley's, A. B. C. 5th Edition. Principal imports: Beans, peas, butter, bean oil, rice, etc., etc., Principal exports: Dried and evaporated vegetables, canned fruits, apples and general merchandise. Bank references, Standard Banks of Canada, Vancouver, B. C.
- LUMBER PRODUCTS, LTD., Credit Foncier Bldg., Vancouver, B. C. Established 1918. Code used, A. B. C. 5th Edition and Western Union. Saw mill and plant at Queensboro, New Westminster, B. C. Principal exports: Boxes, toys, etc. Bank references, Bank of Hamilton, Vancouver, B. C.
- MACPHERSON & TRETTEL, 1290 Homer St., Vancouver, B. C. Established 1906. Telegraphic address, "Mactee." Codes used, all. Principal imports: Hardware, cutlery, cocoa matting. Principal exports: None. Bank references, Royal Bank of Canada.
- W. H. MALKIN & CO., LTD. Head office, 57 Water St., Vancouver. Branch office, The Malkin Pearson Co., Ltd., Nanaimo, B. C. Established 1895. Telegraphic address, "Malko." Codes used, Western Union, A. B. C. 4th and 5th Editions. Principal imports: Rice, sago, tapioca, spices, tea, coffee, cocoa, butter, currants, raisins, dried fruit, canned fruit, canned vegetables, canned fish.
- CHARLES S. MEEK & CO., LTD., Pacific Bldg., Vancouver, Canada. Cable address, "Chameek Vancouver." Codes used, Bentley's, Western Union 5-letter Edition, Riverside. Export merchants and forwarders. Established 1910. Exports: Steel, copper, brass, lead, plates, bars, sheets, rails, wire rope, barbed wire, fencing wire, wire netting, nails, bolts, nuts, rivets, agricultural machinery, farming tools, dairy machinery, steel working machinery, sawmill machinery, shipbuilding machinery and equipment, special machinery, mining machinery, cranes, conveyors, electrical supplies, window glass, plate glass, Canadian wheat, flour, canned fish, canned milk, heavy chemicals, dyes, paper, etc. Importers of licorice root, hides, tanning extracts, beans, oils, etc. Bankers: The Imperial Bank of Canada. Cable us your requirements. We will cable you C. I. F. quotation your nearest port.
- THE MODERN COMPANY, 365 Hastings St. E. Established 1913. Principal imports: Japanese and Chinese silks and fancy goods.
- O'LOAME, KIELY & CO., LTD. Office and warehouse, 157
  Water St. Associate offices, Seattle and San Francisco, and reliable brokerage connections in all wholesale cities in Canada. Telegraphic address, Britsalmon. All standard commercial codes. Principal imports: Food products, all kinds, also oil, preferably in barrels, prices wanted basis net landed weights, C. I. F. Vancouver on cocoanut, soya bean, castor, cottonseed, rapeseed, peanut, Chinawood oil; also tallow, lard, grease, honey, fruit pulp, especially strawberry and red raspberry; Australian currants, hemp, peas, beans, seeds, peanuts, walnuts, tapioca, sago, Ceylon cocoanut, pepper, canned pineapple, cassia, South Sea and Oriental produce. Principal exports: Canned and cured fish, including Canadian canned salmon, herring, clams, pilchards, salt herring in barrels and kegs, Scotch, Norwegian and Holland style cures; smoked herring, whole and boneless; all Canadian natural and manufactured products. Reference, The Dominion Bank, Vancouver, Canada.
- PACIFIC AGENCIES, LTD., 319 Homer St. Established 1917. Telegraphic address, "Pavan." Code used, Western Union. Principal imports: Fancy goods, silks, small wares, booklets, hardware, general dry goods, toys of all kinds and flags. Principal exports: Products native to B. C.

- REYNOLDS TIMBER, SKIPPING AND INSURANCE AGENCY, LTD. Lumber and shingles. M. J. Haney, C. E., president Pacific Bldg., Vancouver, B. C. Telephone, Seymour 2608. Hale H. Hetherington, department manager.
- Telegraphic address, "Sankey." Codes used, A. B. C. 5th Edition. Principal imports: Cotton waste, lubricating oils, sandpaper, emery cloth.
- E. TABATA & CO. Head office address, 362 Alexander St., Vancouver; branch office address, 50-4 Chome Sakayemachi, Kobe, Japan. Codes used, Bentley's, Western Union. Principal imports: General merchandise and fishing supplies. Principal exports: Sea products.
- TRIPALIUM OLEOMARGARINE, LTD., 1200 Hamilton St., Vancouver, B. C. Established 1918. Codes used, A. B. C. 5th Edition. Principal imports: Cocoanut oil, tallow. Bank references, Merchants Bank of Canada, Vancouver, B. C.
- VANCOUVER ENGINEERING WORKS, LTD. Established 1900. Telegraphic address, "Engineers, Vancouver." Principal imports: Steel plates and sheets, pig iron, boiler tubes, bar iron and steel, Ferro manganese, ferro silicon. Principal exports: Logging and mining machinery, ore cars, mine cars.
- THE VANCOUVER SHIP YARD, LTD., 1877 Georgia St., W., Vancouver, B. C. Established 1888. Principal imports: Paints, hardwoods, ship chandlery, cotton ducks. Principal exports: Boats, freighters. Bank references, Imperial Bank of Canada, Vancouver, B. C.
- WALLACE SHIFFARDS, LTD., North Vancouver, B. C. Established 1898. Telegraphic address, "Walyard." Codes used, Bentley's, A. B. C. 5th Edition. Principal imports: Steel plates and shakes, bars, billets, forgings, pig iron. Principal exports: Steel steamers and marine engines.
- E. C. WALSE, 804 Yorkshire Bldg., Vancouver, B. C. Established 1916. Telegraphic address, "E. C. Walsh." Codes used, A. B. C. 5th Edition, Bentley's, Western Union and Slaters. Principal imports: None. Principal exports: Timber of all kinds, principally Douglas fir, specializing in ship timber, spars, and all ship finishings in wood. Bank references, Merchants Bank of Canada, Granville St., Vancouver, B. C.
- B. C. Branch office addresses, New York, Seattle, Telegraphic address, "General." Codes used, A. B. C. 5th Edition, Western Union, A-1 Watkins, Bentleys, Principal imports: None, Principal exports: Canned salmon, canned herring, canned and Scotch cured herring. Bank references, Standard Bank of Canada, Vancouver, B. C.
- THE R. G. WRITE COMPARY, 714 Board of Trade Bldg. Established 1917. Telegraphic address, "Harite." Codes used, A. B. C. 5th Edition, Bentley's. Principal imports: Coffee, beans, rice and all classes of produce. Principal exports: Canned fish.
- C. PEMBERTON WOOLER, P. O. Box 1076, Vancouver, B. C. Established in London, England, 1900. Codes used, A. B. C. 5th Edition. Principal imports: Foods products and drug lines. Principal exports: Tinned British Columbia salmon and herring. Scotch salt cured herring in vessels, kippered and bloatered herring in boxes; British Columbia apples, dried vegetables, British Columbia timber, (Douglas Fir), commercial motor vehicles and pleasure cars, electric light bulbs and paper.

#### VICTORIA, B. C.

- THE BRACKMAN-KER MILLING CO., LTD.. Head office, 1420 Broad St., Victoria: branch offices, Vancouver, New Westminster, Nanaimo, Nelson, Rossland, Prince Rupert, Courtenay, British Columbia, Established 1878. Telegraphic address, "Brackman." Codes used, A. B. C. 5th Edition, Bentley's, Western Union. Principal imports: Maize, soya bean cake, linseed cake, cottonseed cake, beans, peas, buckwheat, hemp, millet.
- CAMERON LUMBER CO., LTD., 7 Moody Block, Victoria, B. C. Established 1906. Cable address, "Camlumber." Bank references, The Merchants Bank, Victoria, B. C. The Dexter Horton National Bank of Seattle, Wash. Exporters of lumber, fir cross arms, box shooks, etc.
- wasterley park, Victoria, B. C. (Canada). We mail our special airtight packages to all parts of the world, containing all kinds of choice foods from % 1b. upwards, specially our own jams, chocolates and candies. Wire for our price list. Send for our \$1.00 box of Chocolate Raisin Clusters.

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Quality Hams, Bacon, Lard and Compound, Dry Salt and Pickled Pork, Frozen Poultry, Cooked and Spiced Goods, Pickled Butter, Oleomargarines, Condensed Milk, Canned Salmon, Canned Fruits and Vegetables, Pastes, Gums, Sausage Casings, Edible and Inedible Tallow, Gelatines, Glues, all kinds Oil Meal Feeds, Animal and Poultry Foods, Shin and Thigh Bones, Animal and Mineral Fertilizers.

# Exporters of Lumber



DOUGLAS FIR (Oregon Pine)
PORT ORFORD CEDAR (White)
SITKA SPRUCE
WESTERN HEMLOCK
WESTERN WHITE PINE

#### SAARI-TULLY LUMBER CO.

Northwestern Bank Bldg.

Portland, Oregon

Foreign Connections Solicited

- McTAVISE BROS., 1218 Government St., Victoria, B. C. Established 1880. Telegraphic address, "McTavish." Codes used, A. B. C. 5th. Customs brokers, shipping and forwarding agents. Bank references, Bank of Montreal
- THE HAMMOND INON WORKS, Warren, Pa. An old established firm. Manufacturers of steel tanks, steel plate construction, specializing on steel and oil refinery equipment; fuel oil storage for industrial plants. Best bank references. Geo. Armstrong, Pacific Coast representative, 319 Hobart Bldg., San Francisco, Cal.

#### WELLINGTON, NEW ZEALAND

- tomhouse Quay. Wellington, N. Z. Established 1890. Cable address, "Arlow." Codes used, Bentley's, A. B. C. 5th Edition, A-1 Branches, import office, Christchurch, N. Z. Bank references, National Bank of New Zealand, Christchurch, N. Z. Imports: Merchandise of every description. Exports: Frozen meats, offal and rabbits, canned meats, tallow, oleo, premier jus, soap grease, lard, neatsfoot oil, hides, calfskins, leather, pelts, wool and wooled skins, rabbitskins, bones, horns, hoofs, butter, cheese, casein, dried milk, preserved milk, Kaurigum, jam, honey, beeswax, hemp, tow, grain, peas, cacao beans, mercury, scheelite.
- JOHN BIGG & CO., 37 Discon St., Wellington, New Zealand. Established 1890. Branch office, Auckland, Christchurch, Dunedin, New Zealand Bank references, National Bank of New Zealand, Wellington, New Zealand. Importers of cocoa, chocolate, confectionery, cocoa butter and all supplies for the retail and manufacturing confectioner, paper bags, wrapping paper, wax paper, soda fountains and all accessories and supplies for the soda fountains and ice cream trade, essences, flavors, color, fruit juices and fruits, etc., bakers requisites and supplies, tea, leather belting, etc.
- **HERBET G. TEAGLE, LTD.**graphic address, "Teaspur."
  Edition. Principal imports: Gas, lighting material, hardware, motor accessories, etc.
- THOMPSON BROS., LTD., 8-22 Blair St. Telegraphic address, "Thomsonite." Codes used, A. B. C. 4th and 5th Editions, Western Union and private. Principal imports: Fresh canned and dried fruits, canned fish, onions, flour, nuts, bakers, sundries, provisions, tobacco.

#### WINNIPEG, CANADA

CANADIAN JAPANESE IMPORT CO., LTD., 72-74 Princess St., Winnipeg, Canada. Established 1916. Cable address, "Canjap." Codes used, Western Union, A. B. C 5th Edition. Branch offices, 242 Yamashitacho, Yokohama, Japan. Bank references, Merchants Bank of Canada, Winnipeg, Canada. Imports: General merchandise. Exports: Iron, steel and machinery.

#### YOKOHAMA, JAPAN

- 8. ADACHI & CO. (San Francisco Branch), 2 Motohama Cho., Yokohama, Japan. Branch office addresses, Sakiyicho 3 Chome, Kobe, Japan, and Hakodate, Japan. Telegraphic address, "Adachi," San Francisco. Principal imports: Marine products. Principal exports: Machinery, hardware. Bank references, Bank of Taiwan and Yokohama Specie Bank of San Francisco.
- A. M. APCAB & CO. Established 1890. Head office, No. 49
  Yamashita-cho, Yokohama, Japan. Branch office, Kobe,
  163 Sannomiya-cho, Nagoya, Nakano-cho Sanshome No.
  26. Telegraphic address, "Apcar." Codes used, Western
  Union, Lieber's, Bentley's, A. B. C. 5th, Private. Bank
  references, Hongkong & Shanghai Banking Corporation.
  Importers of shellac, ivory, automobiles, motorcycles,
  etc. Exporters of silk piece goods, shirtings, underwear, etc., bronze and brass ware, china ware, toys.
- C. M. BEBSANIA & CO. Established 1894. Head office address, P. O. Box 148, 85 Main St., Yokohama, Japan; (for far East). Main head office address, Bhesania Bldg., 70 Herby Road, Fort Bombay, India. Telegraphic address, "Bhesania." Codes used, Bentley's, A. 1. A. B. C. 5th edition, Private. Bank references, The Honkong and Shanghai Banking Corporation (Yokohama). Importers of: Shellac, jute, castor seed, cocoanut oil, copra, peanuts, etc. Also chemicals, heavy hardwares, paints and colors from U. S. A. Exporters of: Sulphur, carbide, beans, fish oils, silk piece goods, curios, etc.

- COOPER & CO. Head office address, 47 Yamashita-cho, Yokohama, Japan. Branch office addresses, 38 Union Square, New York City, W. L. Croker, representative; London, Messrs. Cooper, Ewing & Co., Ltd., 73 Chiswell street. Principal exports: Silk place goods, plain and fancy, silk handkerchiefs, cotton piece goods, blankets, press studs, bootlaces, glassware, hosiery, silk and cotton, etc.
- THE GENERAL COMMERCIAL CO., LTD., 247-249 Yamashitacho, Yokohama, Japan. Cable address, "Alminko." Codes used, A. B. C. 5th Edition, Bentley's, Lieber's, Western Union, and later the "Marconi." Branches, Osaka. Bank references, International Banking Corp. and Bank of Taiwan. Imports: Dry and soft goods, metals of all descriptions, paper, machinery, hardware, drugs, foodstuffs, etc. Exports: Dry and soft goods, metals of all descriptions, hardware, foodstuffs, cereals, silk and other materials.
- GRIFFIM & CO., 75 Main St., Yokohama, Japan. Established 1915. Cable address, "Griffin." Codes used, Bentley's, A. B. C., Al, Liebers, Western Union, Scotts. Bank references, Chartered Bank of India, Australia and China. Exporters of: Manufactured silks and cottons, and garments made therefrom, glassware, menthol and drugs, produce. Importers of: Steel, chemicals, machinery.
- I. INAGANI & CO. Head office, 69, Ogicho, 2-Chome, Yo-kohama, Japan. Branch office address, Tokyo and Osaka. Telegraphic address, "Inaikuko." Codes used, A. B. C. 5th edition and Bentley's. Bank references, The Yokohama Specie Bank, The One Hundredth Bank.
- REAME & STROME, LTD., No. 12 Yamashita-cho. Established 1890. Telegraphic address, Strome. Codes used, Bentley's, A. B. C. 5th edition, A-1, Western Union, Lieber's, Voller's 12 figure system. Principal exports: Silk piece goods, manufactured silks of all kinds, hemp braids, Panama hats, hosiery of all kinds, cotton goods, curios, snap fasteners, bootlaces, hardware, tobacco, produce (beans, peas, oils, seeds, etc.).
- Nichome, Yokohama, Japan. Branch office address, Tokyo, Japan. Established 1873. Telegraphic address, Sunshine, Yokohama. Codes used, A. B. C. 5th edition and private. Principal imports: Chemicals, metals, hardwares, dyestuffs, asbestos, raw materials, raw rubber, steel, etc. Principal exports: Raw silks, douppion and spun silks, cotton and woolen yarns, chemicals, beans, peas, minerals, brushes, buttons, habutaes, crepe du chine, cotton gloves and towels, surgical instruments, manufactured goods of silk, etc.
- E. J. KING & CO., GOMEI KAISMA, 74 Yamashita-cho, Yokohama, Japan. Established 1909. Cable address, "Kingdragon." Codes used, A. B. C. 5th Edition, Western Union, Western Union 5-letter, Lieber's, Bentley's, Excelsior. Branches, 31 Kajimachi, Hakodate, Japan, 23 Sakaye-cho Otaru, Japan, and Kushiro, Japan. Bank references, Hongkong & Shanghai Banking Corp. Imports: Machinery and farming implements. Exports: Hardwood timber and lumber, railway ties, peas, beans, starch, fish and vegetable oils.
- MARU & CO., No. 28 Furoucho Itchome, Yokohama, Japan. Established 1915. Cable address, "Maru." Codes used, A. B. C. 5th edition, private. Branch office at Nagoya, Japan. Bank references, The Chartered Bank of India, Australia and China, The Yokohama Specie Bank, Ltd., Yokohama. Importers of rubber, leather, artificial silks, perfumery materials, matter materials. Exporters of: Silk goods, cotton goods, toys, hardware, porcelain and haberdasheries.
- MOSAKI BROS. & CO. Head office address, 31, 40 and 41
  Aloicho Nichome, Yokohama, Japan. Branch office addresses, 11 Sanchome Honkokucho Nihonbashiku, Tokyo; 40 Uramachi, Kobe; 1 Itchome, Kamidori Kitahoriye Nishiku, Osaka; 112 Market street. San Francisco; 621 Broadway, New York. Established 1890. Telegraphic address, Nozaki. Codes used, A. B. C. 5th edition, Western Union, A-1, Lleber's, Bentley's, private codes. Principal imports: Leather, hides and skins, shoe appurtenances, tanning materials, tin plates, manila hemp, etc. Principal exports: Silks, braids, hat bodies, canned crab, canned salmon, canned sardines, agar agar, peanuts, beans, seeds, chillies, etc. Principal exports: Iron, steel, wire nails, chemicals, tin plate, beer, canned fruit, barrel shooks, galvanized wire, glass, hoop iron, leather, boiler pipes, etc.
- THE YOKOHAMA MURSERY CO., LTD. Head office address, 21-35 Nakamura, Yokohama, Japan. Branch office addresses, London, New York, Seattle, Vladivostok. Established 1890. Telegraphic address, Uyekigumi, Yokohama. Codes used, A. B. C. 5th edition and Western Union. Principal imports: Bulbs, seeds, nursery stock, horticultural sundries, agricultural implements. Principal exports: Lily bulbs, seeds, plants, fern balls, bamboos, pots, stone lanterns, garden ornaments, beans, herbs, botanical drugs, etc.

### Fort Dearborn National Bank

AGENTS<

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WM. A. TILDEN, President WM. LE GROS, Cashier E. N. HEINZ, Mgr. Foreign Dept.

Capital and Surplus, \$4,000,000.00

The Foreign Department of this Bank holds forth a highly specialized service of distinct advantage and helpfulness to those participating in, or contemplating, foreign trade connections. Our extensive correspondent resources, and vast fund of data on foreign market conditions present effective facilities for adding international trade connections to both importers and exporters. We conduct thorough credit investigations and issue letters of credit to all foreign countries.

Merchandise and Traveler's Letter of Credit Transactions Invited.

ENGLAND—Lloyds Bank, Ltd., Bank of Liverpool and Martins Bank, Ltd.
FRANCE—Lloyds Bank (France) and National Provincial Bank (France)
Ltd. Comptoir National d'Escompte de Paris.

JAPAN—Yokohama Specie Bank.
CHINA—Chartered Bank of India, Australia and China.
AUSTRALIA AND NEW ZEALAND—Bank of New South Wales. Commercial Bank of Australia.

### WILLITS AND PATTERSON

BRANCHES:

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#### IMPORTS:

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REFERENCES: First National Bank, San Francisco, Cal.

W/E have Tank facilities for handling all vegetable oils in bulk. barrels and cases for trans-shipment in our own Tank Cars.

Cable Address: "CHASWILL." Codes: A. B. C. 5th, Western Union 5 Letter Edition, Bentley's

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All kinds of American manufactured products. Canned Goods Provisions. Etc. Salad Oils, Rosin Turpentine, Tallows Dyes, Chemicals Machinery and Steel Products of every description

Established 1891

# Pacific Novelty Company

41 to 51 East 11th Street

NEW YORK, U.S.A.

Manufacturers of

Combs, Hair Pins and all kinds of Hair Ornaments, Toilet Sets, Manicure Sets, Novelties, Dolls, Toys, Etc.

> Cable Address: Adaunt, N. Y. ABC Code, 5th Edition

ORIENTAL EXPORT & IMPORT CO. Head office, 101 Ohgichonichome, Yokohama, Japan. Branch offices, Tokyo and Vladivostok. Established 1914. Telegraphic address, Hito, Yokohama. Codes used, A. B. C. 5th edition, Lieber's Western Union, Bentley's and private. Principal imports: Leathers, chemicals, machineries, hardware, motor cars and accessories, structural materials, colors, paints, oils, wood pulps, papers, pencil wood, wines and liquors, toilet articles, etc. Principal exports: Silks, silk goods, cotton pieces, cotton goods, silk and cotton hosiery, drawn work, toys, brushes, buttons, leathers, boots and shoes, electrical goods, gas fittings, surgical instruments, hemp and straw braids and general manufactures, raw produce, oils and chemicals, etc.

THE TOKAL ENEWAN CO., LTD. Established 1810.
Office address, Kanagawa-machi, Yokohama, Japan.
Telegraphic address, Tekk, Yokohama. Codes used,
A. B. C. 5th edition. Bank references, Yokohama Specie
Bank, Dai Ichi Bank, Soda Bank, Watanabe Bank.
Shichijushi Bank. Tobe Bank. Exporters of:
lead, tin foil, lead pipe, tin pipe, lead sheets, etc.

#### **ZURICH. SWITZERLAND**

ESER, HEGNER & CO. Established 1866. Head office, Zurich, Switzerland. Branch office, Yokohama, 90-a, Yomashita-cho, Kobe; 107, Itomachi, Tokyo; 4 and 5. Honkawaya-cho, Nihonbashi-ku (P. O. B. 16). Telegraphic address, Siber, Japan. Codes used, A. B. C., Lieber's, Bentley's, Western Union, private. Bank refreences, all foreign and leading Japanese banks in Japan. Importers of: Metals, machinery, hemp, wool, chemicals, drugs, textiles, mill supplies, etc. Exporters of: Raw silk, spun and dressed silk, Japan produce in general, copper, chemicals, etc.

#### Hellenic Chemical & Color Co.

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Cable "Helenco," N.Y. A.B.C. Code, 5th Edition



For Cotton, Wool, Silk, Leather, Wood, Soap, Ink, Paper, Etc. Textile Specialties. Dry Colors and Oil Soluble Colors. Heavy Chemicals, especially Soda Ash, Caustic Soda, Bichromate, Yellow Prussiate Soda, Bleach, Etc. Cable for prices. Ultramarine Blue in bulk or packages.

IRON, STEEL AND TIN PLATE

General Produce Merchants and

## J. M. Alves & Co.

Manufacturers' Representatives SHIPPING AND INSURANCE AGENTS

HONGKONG, and at CANTON

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#### SPECIALTIES:

Export Rice, Feathers, Ginger, Peanuts, Canes Cassia, Leaf Tobacco, Soy, Yunnan-Tin, Antimony, Tea - Wood - Peanut - Cassia and Aniseed Oils, Hides, Etc., Etc.

Import Soap, Saltpetre, Barrels, Flour, Groceries, Piece Goods, Cotton and Woolen Textiles and Sundries, Metals of all descriptions, Machinery, Dyes and Colors, Wine and Spirits, Gunny Bags, Etc., Etc.

Codes: { A. B. C. 5th Edition, A. B. C. Improved, Bentley's, Lieber's, Lieber's 5-Letter, Scott's, Western Union, Western Union 5-Letter.

### SCHWARTZ BROS.

Established 1877

310 Sansome Street, San Francisco, Cal.

Commission Exporters Importers

SCHWARTZ & CO., Guatemala, C. A.

# VIVAUDOU

Perfumery's latest sensations

Mavis, Lady Mary, Pour la France Fleur de France

VIVAUDOU PARIS—NEW YORK

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HARBOR ISLAND SEATTLE, WASH. Largest and most modern ship repair plant on the Pacific coast—repairs made to steel and wooden vessels.

Floating dry docks of 12,000 and 3,000 tons capacity—quick service on all classes of marine repairs.

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General agents for White Oil Burning System.

Yarrows Water Tube Boilers.

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CABLE ADDRESS: Silvanetto - Hongkong. Silvanetto & Roylin, Canton CODES USED: A. B. C. 5th Edition, Western Union, Lieber's Improved and Private Codes

#### **SPECIALTIES**

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### ALMARIN COMPANY

offers you its services in case you have a surplus of dyes you wish to dispose of.

Do not sacrifice them, but list with this department for quick sale.

We constantly receive calls for most of the scarcer colours.

We are glad to render this service to our regular customers with a view to stabilizing the general dyestuff conditions in the textile and allied industries.

For our line of standardized colours, see page 18

#### THE ALMARIN COMPANY

A. ANDREW ROBINSON, President

MANUFACTURING CHEMISTS

[Cables: Almarin, N. Y.]

Singer Building

New York, U. S. A.

19 Years of Chemical Progress

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Cable Address KABOCK, N.Y.

**Exporters** 

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Some of the regular contributors to PACIFIC PORTS are:

Will H. Bennett: One of todays' best posted writers on current trade topics and international commerce, who knows the ways and whims of "foreigners" as these peculiarities affect business, and who is able to translate these, by suggestion, into advantages rather than obstacles to the American exporter, who will follow where he leads.

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A. C. Blackall: Has had a long and practical experience in many parts of the world and in various foreign trade lines, which has given him a grasp of the subject possessed by few, with a rare facility for presenting the fruits of his work and study, all the more valuable for the simplicity of the style in which he writes of important problems.

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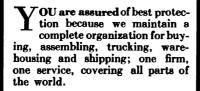
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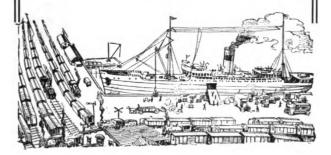
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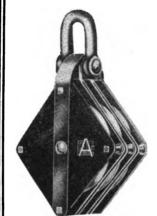
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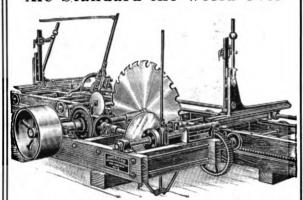
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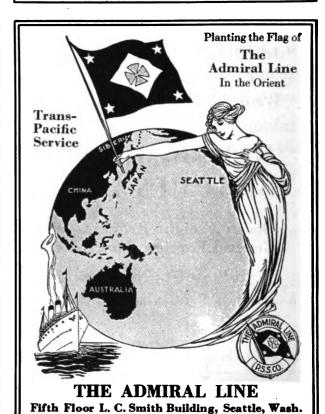


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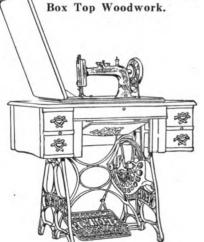
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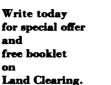
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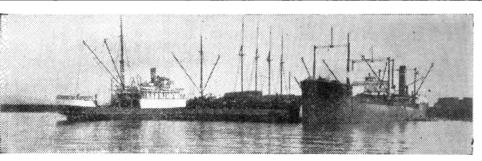


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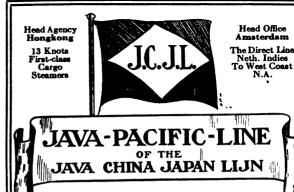
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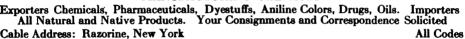
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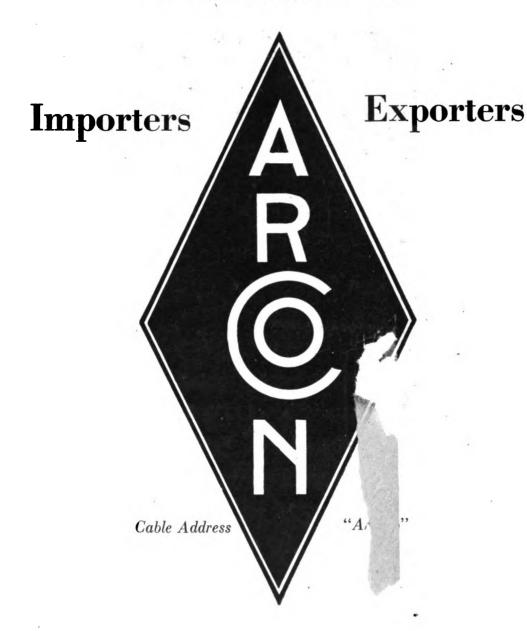
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